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HARVARD MEDICAL ALUMNI BULLETIN

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NO. 2

The Cover: Over a half century ago, when the Orient lay waiting to be tilled with Western ideas and techniques, a small group of HMS graduates set sail for Shanghai, to establish the privately financed Harvard Medical School of China. The story of their venture, which lasted a bare five years, dramatically illustrates an idealistic enthusiasm peculiar to HMS Alumni of that time, as well as the consistently high standards characteristic of Harvard medicine. The cover map is a historical block print of China's Pacific coastline.

Letters to the Editor	2
Along the Perimeter	3
Editorial: Time to Think	11
The Harvard Medical School of China	12
Digging Deep	20
What Becomes of Harvard Medical Students?	26
Medici in Dumnonii	28
The Harvard Medical Society	35
Joe Vincent Meigs	41
Donald Storrs King	42
Honors	43
Alumni Notes	44
Obituaries	48

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LETTERS

The Missing "I"

To the Editor:

A layman on the sidelines can get a lot of pleasure from your *Bulletin*, and I do. The two authors on medical writing (summer and fall) were driving down a street in the neighborhood where I live; and I was glad to hear one of them honking appreciatively at my hero, Sir Ernest Gowers (NOT Glower), whose "The Complete Plain Words" first appeared in this country, I believe, as "Plain Words: Their A B C" (Viking, 1955).

I would fault your authors only on

the omission of a lively Cambridge guide, "Writing a Technical Paper," by astronomical curmudgeon Donald H. Menzel, literary curmudgeon Howard Mumford Jones, and a writing fellow at the Smithsonian named Lyle G. Boyd.

Hear them on the missing "I":

A more or less deformed style inevitably develops when a writer accepts the convention that the scientist must write impersonally. Although he has been a chief actor in the drama, on stage from the beginning of the research, when he presents the work to

the public, he usually follows the prevailing custom and tries to become invisible. The unnatural contortions he must undergo in the attempt can scarcely produce a relaxed style.

To sustain the fiction of impersonality, he gives up the use of the word "I"; the consequences are almost inevitable. Forbidden the first person, he adopts the third; the third encourages impersonal pronouns and passive verbs; and the passive voice creates dangling participles, multiple modifiers, and cryptic statements . . . Carried to extremes, this way of writing implies that an experiment performed itself or was performed by a robot.

WILLIAM M. PINKERTON
News Officer
Harvard University

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At the opening meeting of the "Careers in Mental Health Program" held at the Massachusetts Mental Health Center, Dr. William Barnum, child psychiatrist and leader of the group of high school students who participate in the Program on a weekly basis, gives intent students the facts on this new method of career recruitment.

Along the Perimeter

The Careers in Mental Health Program



So enthusiastic about their experience in the program that they returned to oversee this year's opening meeting, four of last year's chosen twenty listen attentively, while. . . .

In his speech to the nation last February, the President quoted the uncomfortable statistic that "many of our mental institutions have less than half the professional staff required, with less than one psychiatrist for every 360 patients."

Even though twentieth century mass media have gone a long way toward convincing the public that abnormal personalities are neither mysteriously different nor beyond human contact, both meager financial support and the old image of Bedlam still exercise serious restraints on career recruitment for the field of mental health. If the layman is to believe seriously that mental institutions are no longer "snake pits," and that their staffs are no longer bodyguards, he must be approached more directly.

To hurdle these two obstacles in one leap, the Massachusetts Association for Mental Health, Inc., its local, voluntary affiliates, and the Massachusetts Mental Health Center have launched an entirely new kind of "Careers in Mental Health Program." Instead of struggling to reach the entire national workforce, it focuses on the age group most flexible in vocational goals and attitudes, the high school student. Although programs with teenagers have been tried before, this is probably the first such to educate its recruits under professionals in the field on a weekly, one-to-one basis.

Its initiators, Mrs. Stuart Flerlage, a member of the MMHC Auxiliary Board; Dr. Libbie Bower, associate director of the MAMH; and Dr. Jack R. Ewalt, superintendent of the Center and professor of psychiatry at HMS,

have created the program with the hope that it might be used as a national prototype, and although it has completed only one experimental run at the MMHC in 1962-63, its original organizers are helping to implement it at the Boston State and Worcester State Hospitals this year. Wrentham State School and Gardner State Hospital are also following suit independently. Financial support for the program's first year was donated by the MMHC Auxiliary; this year funds are being provided by the Permanent Charity Fund of Boston and the Maurice Falk Medical Fund of Pennsylvania. The latter made its

Dr. Ewalt addresses a meeting of high school faculty and administration members . . .





... *Mrs. Martha Vorenburg, project supervisor of the program, tells recruits how they can contribute to the program outside in their communities, as well as in the Center.*

gift on the condition that it be allowed to send a special group to survey and perhaps imitate the program.

The MMHC cooperates with three high schools in Cambridge, Brookline, and Winchester. At the opening meeting of the program, which draws together guidance counselors, faculty and administration members, and an average of 70 serious-minded students, participants make a tour of the institution (at MMHC these are conducted by the patients themselves) and hear talks by various staff members on their work and training.

Most of these 70 students then form "Mental Health

Clubs" to continue this educational groundwork, while school administration and faculty members return to the Center for one or more meetings on topics relating education to mental health. Out of the original 70, some 15 to 20 students are selected by individual interviews with the project supervisor to make weekly visits at the Center. Guided by the project supervisor who arranges their schedules and many other details of their program, they spend half their sessions with a professional on the wards and the other half in group discussion led by a child psychiatrist at the Center.

These visits are the heart of the program, for they saturate the student with firsthand knowledge of all aspects of the field. With a nurse in training, the student makes patient rounds, observes how she handles them, gets acquainted with them. With a psychiatrist, he sits in on "interviews," which, though set up for his benefit, give him an opportunity to see a patient candidly discuss his problems. With a psychologist, he watches patients undergo tests and examines the procedures and materials. With a social worker, he observes interviews with relatives of the patients and learns the backgrounds on their cases. At occupational therapy sessions, he observes the patients at work, converses with them, and even participates in group discussions or play readings. He may also attend meetings of the staff and sit in on sessions of "patient government," where patients hassle over such mundane problems as bathing and cleaning their rooms.

... *as part of the program's goal to educate educators on mental health careers.*



New Building, New Research



As the atmosphere of this picture will demonstrate, Dr. Barnum and his group make their discussions very relaxed and lively affairs. As one member put it, "everyone contributed, and everyone used each other as references, drawing knowledge from each other."

The typical student begins the program with much unadmitted anxiety. In discussion with other members of the group and Dr. William Barnum, fellow in child psychiatry at the Center, ideas flow in a free, unacademic manner, and the student gradually realizes that he is defending himself against the emotional aspects of his experience. As soon as the student can admit that some of the patients' problems are painfully parallel to his own, he becomes increasingly able to fit their observations into a meaningful whole. By supporting each others' admissions with sympathy and understanding, they become tolerant enough of human infirmity to discuss both patients and ideas candidly and creatively.

All of the participants of last year's program at the Center agreed that it had been highly successful, particularly in directing them toward a mental health career. How far the program will expand remains a question for the future. As part of their original commitment to the program, these students undertake to disseminate what they have learned to their communities. Since the basic goal of the program is that of communication, its structure knows no limits.

Dr. Berry and Dr. John H. Knowles, general director of the Massachusetts General Hospital, helped preside at the dedication last month of a new building that may help man find the keys to problems in both medicine and outer space. The recently completed, two-story Cyclotron Biomedical Building is to become the hub of a large-scale, five-year research and clinical treatment program.

Located adjacently to Harvard University's 160 million volt electron-cyclotron, the new building will receive beams of high energy protons. From the cyclotron into a shielded irradiation area come high energy protons for use in medical and biological research. While the proton beam is operating, the subjects can be monitored from a control room on the same floor by means of closed circuit television. Also on the ground floor is a control room, patient's waiting room, photographic room for x-ray development and surgical sterilization and scrub-up facilities. The second floor houses offices, small laboratories, and animal quarters.

The new building was constructed and equipped from a \$182,000 grant from the National Aeronautics and Space Administration. NASA's stake in its future research is a concern with how high energy protons, recently discovered in considerable intensity in the Van Allen radiation belt and in solar bursts in interplanetary space, will effect biologic systems, including man.

The program is being supported at Harvard and the Massachusetts General Hospital by additional grants from NASA and the National Institutes of Health. All of its basic research and clinical research projects will be under the control of Dr. William M. Preston, director of the Cyclotron Laboratory and chairman of the department of physics at Harvard, and Dr. William H. Sweet, associate professor of surgery at the Medical School and chief of the neurosurgical service at the Massachusetts General.

Because research in nuclear physics was considered so urgent, medical and biological research did not begin at the Harvard Cyclotron until recently. Since 1960, however, scientists from the Medical School and the Massachusetts General have been able to use it for both animal experiments and clinical research. Dr. Sweet and Dr. Raymond J. Kjellberg, associate in surgery, have developed a method for temporarily improving the conditions of brain tumor patients which may evolve into a new way of managing intracranial diseases — that of "radio surgery." An application which includes prior location of the tumor by contrast radiography or radio-isotopes and subsequent "surgery" by concentrating a precisely positioned proton beam at the site of the tumor, it produces a minimum of damage to the surrounding, healthy tissue.

Other research programs either now operative or planned for the new building by Harvard Medical faculty and associates include those of: Dr. Richard A. Field, assistant professor of medicine at the Massachusetts General Hospital, on the treatment of eye diseases attributed

to diabetes; Dr. Majic S. Potsaid, clinical associate in radiology, on the depth and degree of radiant energy penetration in a model of living tissue; Dr. Frank R. Ervin, assistant professor of psychiatry at the Massachusetts General Hospital, on the use of the proton beam to produce functional changes in small areas of the central nervous system; and Dr. Kathleen Stratton, research fellow in medicine, on how proton beams affect the ability of enzymes to perform their normal tasks.

The John Rock Professorship Is Established

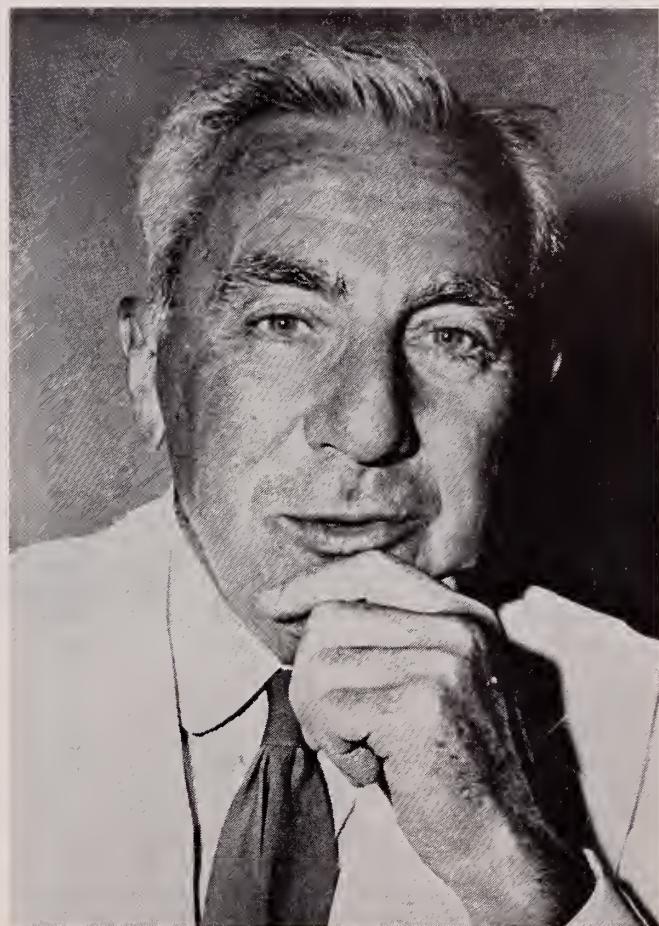
A John Rock Professorship has been established in the Center for Population Studies at the Harvard School of Public Health. Funds to endow the permanent chair have been pledged anonymously, with the request that it be named for Dr. Rock '18, clinical professor of gynecology, *emeritus*; authority on the physiology of human reproduction; and author of the recently published book, *The Time Has Come: A Catholic Doctor's Proposals to End the Battle Over Birth Control*.

In announcing that the chair had been created, President Pusey said, "I express gratitude for the generosity which motivated this gift and for the desire to honor a man whose skill as a physician and whose concern for the welfare of mankind has won him a place of eminence among Harvard's professors *emeriti*."

Dr. John C. Snyder, dean of the Harvard School of Public Health, stated that the new professorship, which is the School of Public Health's second endowed chair in the population field, will greatly hasten the activation of the Center for Population Studies. Plans for the organization of this Center on a university-wide basis, which were announced last May, include the gathering together of a group of experts, already eminent in their respective fields, to concentrate on the global problem of over-population. Several more professorships and funds for new facilities are now being sought.

Dr. Rock, who is a consultant to Dr. Snyder on the development of this new Center, began teaching at the Medical School in 1922, when he was appointed assistant in obstetrics. He became clinical professor of gynecology in 1947 and retired to *emeritus* status in 1956. At the Free Hospital for Women he established one of the nation's first fertility clinics and served as its director for nearly 30 years. In 1956 he founded the Rock Reproductive Study Center, now incorporated as the Rock Reproductive Clinic, of which he is director. He is also a member of the board of consultation at the Massachusetts General Hospital.

Among numerous affiliations, Dr. Rock is a fellow and former member of the board of governors, American College of Surgeons; fellow of the American College of Obstetrics and Gynecology; fellow of the American Academy of Arts and Sciences; and fellow, *emeritus*, former president of the Obstetrical Society of Boston; and mem-



Dr. John Rock '18

ber of the American Gynecology Society. In 1948 he received the Lasker Award of the Planned Parenthood Federation of America.

In his public statements on overpopulation, Dr. Rock has urged nationwide mobilization of scientists to seek better understanding of human reproduction and more acceptable means of controlling excessive population growth rates throughout the world. "There is real logic and great promise in Dean Snyder's strategy to focus on this problem the minds and talents of experts who have already reached positions of stature in their several relevant fields, but who may not yet have worked directly in population areas," Dr. Rock said. "The faculty of public health at Harvard has led the way in successful collaborative attacks on other complex public problems. . . . Enjoying as it does the cooperation of other faculties at Harvard, it is ideally suited to set a pattern of effective action in the population field."

Editor's Note: The editors regret that in the Fall, 1963 issue of the *Bulletin*, Dr. Jesse F. Scott was designated as associate professor of ecologic medicine. This should have read associate professor of oncologic medicine.



Seated from left to right at the first meeting of the World Health Organization's Expert Committee on Enteric Infections are: Dr. K. W. Newell, Tulane University School of Medicine; Dr. M. R. Farid, Under Secretary, Ministry of Health, Khartoum; Dr. P. Arumanayagam, epidemiologist, Department of Health, Colombo, Ceylon; Dr. M. H. Goodwin, Jr., Scientist Director, CDC-Phoenix Field Station, Arizona; Dr. J. Olarte, Laboratoria Bacteriologia Intestinal, Hospital Infantil de Mexico; Dr. Gustave J. Dammin, department of pathology; Dr. B. Cvjetanovic, chief medical officer bacterial diseases, division of communicable diseases, WHO, Geneva; Dr. S. D. Nosov, department of infections of children, Institute of Pediatrics, Moscow; Dr. M. Sankale, Professeur Agrégé, Faculté de Médecine, Dakar; and Mr. D. J. Schliessmann, deputy chief, Technology Branch, USPHS, CDC, Atlanta.

Gustave J. Dammin Elected Chairman of New WHO Committee

Dr. Gustave J. Dammin, Elsie T. Friedman Professor of Pathology, was elected chairman at the first meeting of the World Health Organization's Expert Committee on Enteric Infections, held in Geneva on November 12-16, 1963.

In an introductory statement at the meeting, Dr. P. Dorolle, deputy-director-general of the World Health Organization, outlined the past work of the Organization in the field of enteric infections, and emphasized the importance of this Committee's mission.

Referring to his new post, Dr. Dammin said: ". . . the four days in Geneva were exhausting but deeply fulfilling. I hope and feel this Committee will provide guidance to those countries where enteric infections are the major cause of morbidity and mortality among children. A report of the Committee's work and recommendations was completed during our meeting, and it will be published and distributed in the near future."

During the meeting Dr. Dammin read his paper, "Pathology and Pathophysiology of Enteric and Diarrheal Disease," which described the recent work done on the following important subjects: microbiological and immunological diagnostic procedures; morphological changes and pathophysiological correlations. Detailed references were made to studies on cholera, shigella and fatal diarrheal disease in Guatemalan children with which Dr. Dammin became familiar while working with the Walter

Reed Army Institute of Research in Washington, and the Commission on Enteric Infections of the Armed Forces Epidemiological Board. Studies in Guatemala were directed by Dr. Donald Feldman, department of pathology, Peter Bent Brigham Hospital.

Dr. S. D. Nosov of the Institute of Pediatrics, Academy of Medical Sciences, Moscow, was elected vice-chairman of the Committee and Dr. J. Olarte, Hospital Infantil de Mexico, was elected rapporteur.

The Walter B. Cannon Room Is Created

A newly constructed seminar room on the connecting fourth floor that links buildings C-1 to C-2 has been named The Walter B. Cannon Room, as a memorial to "one of Harvard's greatest professors."

So honored by Dr. Berry for his 45 illustrious years of service to the School, Dr. Cannon, who graduated from the Medical School in 1900, was consecutively instructor in physiology, assistant professor of physiology, George Higginson Professor of Physiology, and George Higginson Professor of Physiology, *Emeritus*. He retired to *emeritus* status in 1942.

The room is part of a new floor that was created by rebuilding the wing between C-1 and C-2 and "mezzanining" the Bowditch Library. On this new mezzanine floor, beginning at the C-1 end, a series of connecting rooms have been constructed: a small physiology seminar

room, the large seminar room named after Dr. Cannon, a biochemistry seminar room, and a small seminar room for the division of medical sciences.

The creation of the Walter B. Cannon Room was approved, upon the recommendation of the faculty of medicine, by the president and fellows of Harvard College on October 7, 1963.

"Physicians for Social Responsibility"

Early in 1961, a group of Boston physicians began to meet to share their concern about the danger of nuclear war. Some were Harvard Medical Alumni and associates, others were not; but all of them, as physicians, felt a special revulsion against, and a special responsibility to prevent the widespread death and devastation that thermonuclear war would bring. It was highly ironic, they felt, to work at the bedside of a relatively few patients while continuing to ignore the possibility of awesome morbidity and incomparably greater loss of life that could be caused by weapons of the atomic age. How could the medical profession be stimulated to face the key issue of our age — prevention of nuclear war?

In order to probe such questions scientifically, the group formed under the name of Physicians for Social Responsibility, with Bernard Lown, assistant professor of nutrition, HSPH, as chairman of its executive committee. Today their fast-growing membership of nearly 400 physicians is spread all over the United States. As yet, the group is not a national organization, but an "autonomous" group that has no other affiliations. They see themselves as simply an association of doctors concerned with the challenge of the nuclear age, whose response to this challenge is dictated by their dual responsibilities as scientists and clinicians.

During the past few months PSR action has demonstrated that its program is workable. The results are a tribute to the efforts of a very diverse group with roots in all fields of clinical and academic medicine. The parent group, founded in Boston in 1961, began by making an intensive and systematic study of the possible effects of a large-scale nuclear attack. Initiated largely by inquiries from practicing physicians on behalf of their patients, the study assembled information that might help physicians save lives and mitigate suffering.

After long months, much pertinent reading and many discussions, the PSR members presented their findings in Washington. In June, 1963, Victor W. Sidel '57, PSR vice-chairman; David G. Nathan '55, executive committee member; and PSR members Robert W. Colman '60 and Stephen B. Shohet '60, all testified before a subcommittee of the House of Representatives Armed Services Committee to emphasize the ineffectiveness of the government's proposed shelter program.

Earlier in 1963 PSR member Lester Grinspoon '55, represented PSR before the same subcommittee on the potential psychological hazards to children if a fallout shelter program was implemented.

During talks on the test ban treaty this fall, the PSR executive committee sent an open letter to the Senate, in which they commended President Kennedy for his negotiation of the treaty as an act which could lead to elimination of further atmospheric contamination. The letter also advanced their belief that the only effective cure against the grave challenge to mankind's well-being was prevention. Daniel Dextin '57, PSR executive committee member, also testified for ratification of the test ban treaty before the Senate Foreign Relations Committee.

A PSR symposium which appeared in *The New England Journal of Medicine*, May, 1962, has been expanded into a book, *The Fallen Sky: Medical Consequences of Thermonuclear War*, published last August by Hill and Wang. Edited by Saul Aronow, Ph.D., Frank R. Ervin, assistant professor of psychiatry at the Massachusetts General Hospital, and Victor W. Sidel '57, the book (and symposium) was written with the same assumptions as those presented to the Joint Congressional Committee on Atomic Energy in 1959. It is the view of PSR that given the medical, physical, and biological effects of thermonuclear war, the only defense is prevention.

It's Never Too Late

The following letter was recently received by the Harvard Medical Library from a distinguished alumnus of Harvard College:

Dear Sir:

The other day I was looking through "my" books and I came across the little book which I am enclosing. Many years ago (about 1926), when I spent a year at the Harvard Medical School, I must have taken out this book without signing for it. After such a long time there may not be room on the shelf, but it is a very thin book.

Alfred E. Mirsky
Rockefeller Institute

In welcoming home this wayward child — *Untersuchungen Uber den Salpeter und den salpetrigen Luftgeist, das Brennen und das Athmen*. Leipzig, 1901, — the Library wonders if a record has been established.

If there is an alumnus who can find on his shelves a Library book which he has had out for longer than 37 years, he may, upon returning it, qualify in the Contest to Find the Longest-Term Loan. The first prize is a silver-plated borrower's card.

This is your chance to become famous. Search your shelves now. If you find a Library book you have had out only ten or twenty years, even in this case it might be fun to return it.

RALPH T. ESTERQUEST
Librarian

Inside HMS: Medicare Comes To HMS

I feel I've witnessed the Lincoln-Douglas debates, or the battle between the Titans and the gods, or something similar. It's an interesting issue, this Medicare business, but the people who talk about it are interesting too, in their own way. This fellow Annis — you know, the one from the AMA, came to HMS recently to tell us what he knew, and also what he thought, about the problem. Now my readers west of Buffalo may not see what's so exciting about that; but here in the East, especially here at this bastion of neo-Keynesianism, it's not every day we have an opportunity to hear a man like Dr. Annis. It resembles a cultural exchange; several students brought their cameras.

At any rate, out of the West, like Lochinvar, came Annis with his gunbearer, one Dr. Hussey, who showed pretty kodachrome slides and served as a straw man for Dr. Rutstein. Now this fellow Rutstein is another interesting one. In case you're not *au courant* in Public Health circles, David D. Rutstein is head of that department and king of the statistic-sifters here. And this time he was waiting for Annis and his Indian friend with something less than abject fear and trepidation; in fact he didn't look the least bit frightened. I guess he'd heard it all somewhere before, but, as I said, it's not every day that somebody tells us government spending is more wasteful and less efficient than private. Believe me, it's pretty scary if you're not used to it, but a flicker of fear never crossed Rutstein's visage.

For the rest of us it was a real treat, watching these giants exhibit their mental gymnastics. It was like going to hear Glenn Gould play Bach: you come away thinking maybe if you'd only practised more as a young child you might have developed similar dexterity.

First Dr. Hussey told us how the AMA is organised. It is like Congress, he said, where no resolve is passed with undue haste but must traverse innumerable committees before coming to a vote. I was somewhat worried by the intricacy of this process, and it was with no small reassurance that I read in the *Times* the following day that the Association had rejected the new privately-proposed compromise medicare plan within hours after its public release, thus demonstrating their ability to circumvent red tape when occasion demands. Dr. Hussey's fine slides and his sincere solipsism impressed everyone.

Dr. Annis spoke next. He's an impressive looking man — well-tanned, with the husky frame and sternly-molded features of a former college football player. He wore a near-black single-breasted suit and a black and red silk tie "neatly asserted by a single pin." If anything, he looked too healthy to be a practising physician, but I suppose one gets that way barnstorming the country fighting medicare. Out in the heat a lot, I guess. He spoke about Kerr-Mills; how feasible it was, how well-designed, how rapidly it was being implemented by the states.

By this time poor Dr. Rutstein was making such choreiform gyrations in the front row that I truly feared for his composure. Fortunately, one of his minions from the Department of Public Health came to the rescue by firing off a salvo of statistics in a distinctly un-Harvard accent, and Rutstein, assuaged, regained normal color and let his SA node resume control.

Annis, unperturbed, told the young, whey-faced lad that his statistics were out of date.

The young man had the temerity to tell Annis that his statistics covered the first half of 1963.

Annis told the young man that the situation had changed radically since then, and that his figures were inaccurate.

The young man told Annis that the data came from the Surgeon General's files.

Annis told the young man that the figures were out of date and anyway, he simply didn't understand the problem. Time was called and Rutstein came off the bench.

Now Dr. Rutstein is an impressive figure too. He's short but gives the impression of being of taller stature, probably because he's in such constant motion that no one can ever assess his true height. He too has a rugged face, but he lacks that well-nourished-in-no-apparent-distress look possessed by Annis. In fact he always looks distressed, pallid, and overworked to boot. Finally he's a man whose socioeconomic views are only slightly less than pliant.

On this occasion he rose to rebuttal with a new brace of statistics. He rattled off things like infant mortalities (Ireland's better than we are) and life expectancies (Norway leads the pack). He talked about nursing homes, another subject with not a few political overtones in this city, and one near to Dr. Rutstein's heart. He talked about medicare too. In fact the only topic he didn't mention was money, but I suppose he thought that subject had been adequately dealt with by his predecessor. That's one nice thing about those Public Health boys — they're never influenced by monetary considerations.

Well, when the dust had all cleared and everybody had spoken and gone home I got to thinking about what had been said, and I even asked a few folks what they thought, and I came to the conclusion that the medical community at large has a somewhat less than incendiary interest in the whole matter of medicare, especially as concerns those finer moral and economic points alluded to by our discussants. Indeed, when I spoke to an intern at one of our better teaching hospitals he commented, "It's an old political trick: giving some people somebody else's money to buy something they can't get anyway — namely, better medical care." And with that short panegyric to his own profession he wiped the sand from his eyes, the hair from his forehead, and the coffee from his chin and headed back to the EW. But they're interesting folk, those debaters, if you have the time to listen.

Editorial

Time To Think

There must have been few of us who, when confronted with the fact of President Kennedy's assassination, failed to be moved to place pen to paper. The revulsion engendered by the act was felt by all men in diverse parties and professions. The President was in law, he was in politics, he was in government; and these three professions must to some extent dedicate their present and future thoughts to the solution of the wrongs from which this sort of act can and did emanate. But, one might ask, to what extent does this assassination place upon us in other less closely associated professions an onus to reinvestigate our own way of life?

If you believe, as did Reston and many others, that "somehow the worst in the nation had prevailed over the best," then the event affords us a compelling excuse to at least look into our own profession of medicine to assure ourselves that it indeed does project the best possible image, and that it has not itself been contaminated by some strain of "madness and violence."

The world seems taken up by hurry and uncertainty today. And quite broadly speaking, "madness and violence" — here, sudden, unthoughtful, compulsive acts — are born of this marriage of uncertainty and hurry. There is uncertainty that stems from conditions in the world today; there is hurry to get on with each day's job and to meet the challenge and the hoped for, but not always realized, joys of tomorrow. Man seems unable to consume the present to its fullest, but rather, hastens to complete the present that he may get on blindly to tomorrow. And from such uncertainty and hurry spring compulsive, unthoughtful, and poorly considered acts.

In Medicine there also is uncertainty as to the future; there is hurry to absorb the enormous meal of knowledge that science has prepared and fear that there is too much to absorb and too little time before tomorrow will come. And so it is perhaps not so paradoxical (in the face of the need for more time to absorb this greater knowledge) that the new curriculum in the last two years at Harvard Medical School will increase even more the free time allotted the student to pursue his own curricular whims. For herein is a time to undo the hurry; to live in and partake of the present and to gain a more certain perspective of the future. There is nothing new in reiterating the need for time to think and consider — but recent events have emphasized compellingly that we need to be reminded again and again. Uncertainty and compulsive acts cannot be born in a milieu of unhurried cogitation and thoughtful discussion.

J. R. B.

THE HARVARD MEDICAL



by Jean A. Curran '21

Dr. Curran's interest and experience in China is of long duration. After a general internship of two years at The Brooklyn Hospital, he and Mrs. Curran spent seven years in North China, most of it in the walled city of Fenchow, Shansi Province, where the author was physician to the American Board Mission Hospital. While on leave, to do special studies and research on tropical diseases at the Peking Union Medical College, Dr. Curran encountered some of the men who had been associated with the Harvard Medical School of China; Dr. William T. Councilman, one-time trustee; Dr. Henry S. Houghton, formerly dean of the Harvard Medical School of China; and Dr. Jui Heng Liu and Dr. Paul Hodges, former instructors.

From 1937 to 1957, Dr. Curran was successively dean and president of the Long Island College of Medicine and dean of its successor, the College of Medicine of the State University of New York, in Brooklyn. He is now professor, Emeritus, of the History of Medicine at this institution.

Since 1956, Dr. Curran has made many trips to the Middle and Far East, under the auspices of WHO, the International Cooperation Administration (now Agency for International Cooperation), and the China Medical Board of New York, Inc. He has conducted studies of medical education in the Middle East, the Philippines, and South Korea. As consultant to the Surgeon General of the United States Army, he has also inspected internships and residencies in Japan, Honolulu, and throughout the United States.

Since 1957, Dr. Curran has been trustee and senior consultant to the Bingham Associates Fund in Boston.

The author is much indebted for encouragement, invaluable assistance, and reference material to: Dr. C. Sidney Burwell, Samuel A. Levine Professor, Emeritus; Miss Dorothy Murphy, executive secretary of the Alumni Association; the staff of the Harvard Medical School Archives; Dr. Albert M. Dunlap '10; Dr. Henry S. Houghton; Miss Mary Ferguson and Mrs. T. D. MacMillan, who were at one time members of the administrative staff of the Peking Union Medical College; and the editorial staff of the Bulletin.

Recent alumni may be surprised to learn that there ever was a Harvard Medical School of China, but, although its existence was limited to five years, 1911-1916, it played much more than an ephemeral or inconsequential role in the introduction of modern medicine to the ancient "Middle Kingdom."

A unique feature of the beginnings of the Harvard Medical School of China was its inspiration by a group of Harvard Medical undergraduates. According to records available in the Medical School Archives¹ and the recollections of Albert M. Dunlap '10, who was present, the students gathered at the Wayside Inn, Sudbury, on the evening of March 2, 1907, to formulate preliminary plans as to "how they could be of greatest service to humanity in the practice of their profession."² All reported they had received invitations from physicians practicing in China to locate a school of modern medicine there, and were eager to join the venture. They proposed sending one of their number to China to select an advantageous site for the new school.

Two non-medical figures took early roles of leader-

1. Harvard Medical School of China, part of the First Annual Report of the Executive Committee of the Corporation, Nov., 1911, p. 12.

2. Apparently there were other early meetings. Shortly after the Harvard Medical School of China was closed, its archives were placed in the Phillips Brooks House in Cambridge, "for the reason that the Harvard Medical enterprise in China was first proposed in student meetings held in that house." Sixth Regular Report of the Executive Committee, Cambridge, November, 1917.

SCHOOL OF CHINA

中國哈佛醫學院

ship and encouragement — Edward B. Drew, a Harvard College graduate who had long been commissioner of Chinese Customs at Shanghai and was then living in retirement in Cambridge, and Edward C. Moore, D.D., professor of theology at Harvard. They and the medical students were able to enlist the warm interest and strong support of Harvard's president, Charles W. Eliot, then in the 39th year of his uniquely distinguished career. His whole-hearted encouragement and immense prestige quite obviously were essential to securing the participation of the medical faculty and its consent to the use of Harvard's name in this idealistic and courageous enterprise in the land of Cathay.

According to Dr. Dunlap, one of the original student group and later a member of the faculty in China, the initial presentation of this idea to the faculty was made on April 4, 1908, at the home of Herbert Leslie Burrell, John Homans Professor of Surgery, (or at the Phillips Brooks House).

On April 29, 1908, the project was presented to some members of the faculty of the Harvard Medical School by Prof. Edward C. Moore, Mr. Edward B. Drew, and the group of medical students who had conceived it. Later, at one of its regular meetings, the Faculty of Medicine went on record in a vote heartily approving the plan.³

3. Harvard Medical School of China, part of the First Annual Report of the Executive Committee of the Corporation, Nov., 1911, p. 12.

Above is "Harvard Medical School of China" in Chinese calligraphy.



Following is the Faculty's recommendation:

The Dean (who was Dr. Christian) then brought up the question of the approval of our Medical Faculty for the proposed teaching of Medicine in China by Harvard men. Upon the motion of Dr. Putnam, it was *Voted* that the Faculty of Harvard Medical School approves and gives its moral support to an institution for the teaching of Medicine in China by Harvard men, as described in the report of these men, which is on file in the Dean's Office.

According to a document found in the Harvard Medical School archives,⁴ "The School, as a school, would exist solely for the purpose of teaching scientific medicine, would not be allied with any missionary organization, and would not require any definite statement of religious belief from members of its teaching staff . . ." It was proposed to raise an endowment fund that would be controlled by a board of trustees in the United States having no organic connection with the Corporation of Harvard University. The membership was voted to consist of Charles W. Eliot, chairman, H. P. Walcott, A. T. Cabot, W. T. Councilman, W. B. Cannon, H. A. Christian, and E. C. Moore. The students, "preparing at the end of their hospital appointments, to practice medicine in the Orient where they feel themselves needed more than here," included Albert M. Dunlap '10, Martin R. Edwards '08, Frank P. Gaunt '11, Walter H. Hiltner '08, James P. Leake '07, Arthur B. Patch '09, and W. Stewart Whittemore '08.

The document further stated that:

Whereas: the establishment of such a school would increase the prestige of Harvard University and would give the opportunity for the development of a Harvard School of Tropical Medicine . . . and the project . . . has the hearty approval of the President of Harvard University, be it, Resolved: That we, the Faculty of the Harvard Medical School approve and give our moral support to such an institution for the teaching of medicine in China by Harvard men.

Dr. Dunlap recalls that the decision to avoid an alliance between Harvard Medical School of China and any missionary organization was not reached without some heart-burning. Walter Hiltner stalked out of a meeting, "declaring that he was not interested if the group did not go out as a religious, connected body." He reconsidered, however, and joined the faculty when it was established at Shanghai. On the other hand, Thomas Dwight, Parkman Professor of Anatomy, a staunch Catholic, became concerned lest the group should be considered Protestant proselytizers. William T. Councilman, Shattuck Professor of Pathological Anatomy, finally settled the controversy by saying, "these young men will not need to go out to China with placards on their backs saying they are Christians. They are going out to teach medicine!"

4. Although undated, this document must have been prepared in 1908.

So much enthusiasm over a plan to foster medical education and better health care in far away China may seem strange today, but Boston had been deeply interested in China ever since its tall ships had engaged in a flourishing overseas tea trade. As early as 1836 a group of medical professors had considered the possibility of introducing modern medicine to the ports of Canton and Macao.⁵ The invasion of the Philippines during the Spanish-American War and the tragedies of the Boxer Uprising awakened Americans to the need for a more enlightened course of action in the Far East. From this followed the Open Door Policy and President Theodore Roosevelt's decision to use the Boxer Indemnity Fund for scholarships — measures which brought promising Chinese students to American colleges and universities in large numbers.

Meanwhile other momentous changes had begun brewing in Boston. By 1906, Harvard Medical School had moved from Boylston Street into its magnificent buildings on Longwood Avenue, pointing the way to the far-reaching developments that followed the Abraham Flexner surveys of medical education in 1909 and 1910. The students and faculty of 1906-1911, who were to play leading roles in the setting up of the Harvard Medical School of China, were very much in the thick of these "earthshaking" events, and their horizons were widened accordingly.

During 1909 the trustees of the Harvard Medical School of China were involved in exploring possibilities and raising funds for the new school. Martin R. Edwards '08 was sent on a seven month tour of China, financed by \$1,000 raised from private subscriptions, to investigate existing conditions and a desirable site for the new School of Medicine. He returned with a vivid account of extensive bubonic plague, cholera, and widespread leprosy; China's ancient, outmoded educational system and forms of medical practice; ignorance about hygiene and disease prevention; and the paucity of Western equipped physicians and hospitals.

Dr. Edwards recommended that the new school be located in Shanghai, pointing out that the already existing St. Johns Medical School and its affiliated St. Luke's Hospital would be willing to serve as a foundation for the proposed Harvard Medical School, which was to have a better staff and more finances. Still, the venture was a modest one, which can be measured by his suggestions that the annual operating budget be set at \$40,000, of which \$25,000 would have to be raised in the United States.

5. Drs. Jackson, Warren, Shattuck, Hooper and Bowditch had supported Dr. Peter Parker, a Yale graduate, as a pioneer medical missionary to Canton, where he began to instruct Chinese students in 1838. From papers relative to the hospitals in China, I. R. Butts, Printer, School Street, Boston: 1841.

In 1911 President Eliot reported that Dr. Edwards had secured pledges of \$31,000 a year for five years, two fifths of which were contributed by the legislatures of Oregon, Washington and California, since these states had a special interest in preventing the spread of plague and cholera to the west coast.⁶ Private donors in New England, New York, Chicago, and Hawaii provided the remaining support, and on May 23, 1911, Harvard Medical School of China was incorporated by action of the Legislature of Massachusetts "for the purpose of promoting medical knowledge."

The story of Harvard's enterprise in medical education in China is systematically recorded in a series of six annual reports on file in the Harvard Medical School archives.⁷ In the First Annual Report, it was noted that the miniature new faculty, which was assembling in the autumn of 1911, included:

Already in China: Albert M. Dunlap, '10, Walter G. Hiltner, '08.

Enroute: Martin R. Edwards, '08 (Dean), William J. C. Sharpe, '08.

Still in USA: Carl A. Hedblom '11, Harold E. Eggers (U. of Chicago) '09.

The faculty gradually began to fill out. During 1911-12, reinforcements joined the group; the first was Henry S. Houghton, Johns Hopkins Medical School '05, who

had served as an assistant in Simon Flexner's laboratory at the Rockefeller Institute and had spent five years at the Wu Hu General Hospital, where he was particularly interested in parasitic diseases. He joined the new faculty as professor of tropical medicine.

The other recruit was Herbert E. Coe, assistant professor of preventive medicine and public health, on loan from the Health Department of the State of Oregon. At the end of the year Dr. Edwards returned to study for the Doctor of Public Health degree at Harvard, and Dr. Houghton took his place as Dean, serving with great distinction. In 1913 Carl A. Hedblom, A.M., M.D., became professor of surgery; David H. Roberg, M.D., was sent out from Oregon to become assistant professor of preventive medicine and public health; T. H. Aschmann, A.M., served as demonstrator in anatomy; and Charles E. Crane, A.B., was made instructor in chemistry and physics. Mr. Aschmann left after his third year at HMS to spend three years in Shanghai teaching anatomy; he later returned to Boston to take his M.D. degree in 1916. He is now a practitioner at Kansas City, Mo.

Harvard Medical School of China had its optimistic beginning on March 4, 1912, immediately after the Chinese New Year vacation, when a full class of 12 Chinese were admitted into the third year, having completed their first two years at St. Johns University. Both faculties joined in using the clinical facilities at St. Luke's Hospital. The lecture rooms and laboratories of St. Johns Medical School proved too small, and another building of 11 rooms was rented to provide additional laboratories, an animal operating room, a library and lecture rooms, at a monthly rental of \$55 U. S. currency.

6. Charles W. Eliot, *The Harvard Graduates Magazine*, Vol. XIX, June, 1911, No. LXXVI, 630-5.

7. Annual Reports and Hospital Reports, etc., 1911-16. Collected and bound by authority of the Executive Committee, February, 1918, Cambridge, Mass.



Standing on the steps of the main building of the Harvard Medical School of China: (l. to r.) Drs. A. M. Dunlap '10; Hans Thue, a Norwegian doctor who served as a volunteer; Wilter '08; Henry S. Houghton; Harold E. Eggers.

Because of dissatisfaction with existing aseptic standards, difficulties soon arose in the cooperative use of the surgical facilities. These and other limitations forced Dr. Sharpe to suddenly resign his post as professor of surgery and return to the United States. In April, the new faculty made a specific proposal to St. Luke's, asking that it turn the management of the hospital over to the Harvard group. This was declined, and they began to look elsewhere for an acceptable alternative.

Fortunately the Chinese Red Cross stepped into the breach, offering its hospital and medical college building on Siccawei Road, not far from the end of the tram line on Bubbling Well Road. This handsome, two-story structure, under complete control of the Harvard group, provided operating rooms, wards for 20 patients, lecture halls, laboratories, administration suite, and student dormitory. Spacious grounds provided room for tennis courts and expansion. All of this was rent free, under the agreement that the new school would retain the three European physicians on the Red Cross staff and absorb the student body of the Red Cross Medical College.

Hence, the beginning of the September, 1913, term saw an addition of nine students in the second year class and a first term group of ten Red Cross College students, plus the 11 others admitted on examination.

Although the Harvard enterprise was now able to round out its facilities and student body, it found itself with a teaching hospital of only 20 beds.

During his visit to Shanghai the previous spring, President Eliot had appointed, under authority delegated by the Executive Committee in Cambridge, a local Advisory Board consisting of distinguished residents of Shanghai. One of its tasks was to secure a site for a proposed new medical center of more adequate proportions. Meanwhile, on May 1, 1913, the contract with the Red Cross Society was extended to five years.

A

s time went on, the school's high standards began to create severe attrition among the students who had not had adequate pre-medical preparation. As President Eliot emphasized on more than one occasion, Chinese students did not appear to be acquainted with the inductive method of reasoning that serves as the basis of all modern science.

He thought it would be the most significant contribution that the West could make to the East. Dr. Paul Monroe of Columbia University stressed the same motive, and pointed to the lack in China of any training in the spirit and method of observation and induction by which knowledge of the conditions of life around us is acquired, tested, and put to use.⁸

8. Raymond B. Fosdick, *The Story of the Rockefeller Foundation*, Harper & Brothers, New York, 81-3.

At the end of the second year, the total number of students had been reduced from 40 to 19. The severest weeding out occurred in the first year class, which was reduced from 21 to nine after mid-year examinations.

It was not surprising, therefore, that at this point the faculty proposed to the Executive Committee that the Harvard Medical School of China reconstitute itself as a graduate school. A number of postgraduate courses had already been given to medical missionary personnel, and it was now felt that a graduate school would not be as large or expensive to maintain as one for undergraduate instruction. The School would be relieved of the onerous task of teaching elementary physics and chemistry; there would be more time for research; emphasis could be laid on training specialists; and, by cooperation with existing medical schools in China, Harvard could occupy a distinctive position in the realm of medical education.⁹

The Executive Committee in Cambridge was not willing to adopt this proposal, feeling that the time was not yet ripe for such a move. Just then came encouraging news that a gift of \$50,000 would be available in February, 1914, for the building of a new hospital. Mr. Charles R. Crane of Chicago, donor of this gift, proved agreeable to its use for the purchase of a new site, and the school bought approximately five acres fronting on Yu Yuen Road for \$26,000.

At this time the Chinese Red Cross Society of Shanghai appropriated more than \$10,000 (Mexican) to construct a dormitory large enough to accommodate 60 students, making it possible to convert the former dormitory into a hospital, with wards for 40 charity patients; a most valuable resource for clinical instruction.

At the beginning of this third academic year, it came to the attention of the Executive Committee in Cambridge that the first class was to graduate the next June (1914). An inquiry to the State of Massachusetts disclosed that, under the laws of the Commonwealth of Massachusetts, the Harvard Medical School of China did not have the right to confer the M.D. degree. Accordingly, a bill was introduced into the Legislature, and the necessary authorization was voted upon and signed by the Governor on May 29, 1914.

On June 27, 1914, the first class of five men graduated, and all received hospital internship appointments in China. One of these graduates, George Yuan Char, later specialized in urology and became professor at the Peking Union Medical College.

The academic year 1914-15 proved to be the school's high point. The school opened on the first of October with 19 students, five of whom were in the entering class. The faculty totaled eight men. Considerable improvement had been made in the plant, and the new

9. E. B. Drew and W. Stewart Whittemore, part of Third Annual Report of the Executive Committee, Cambridge, Mass. November 3, 1913.



Harvard Medical School of China. Building on right: instruction and administration, building on left: part of the hospital.

dormitory for students had been finished in September. An out-patient department was opened in November in downtown Shanghai with Dr. Dunlap in charge, assisted by a few nurses and four senior medical students. Drs. Jui Heng Liu and W. S. New, both graduates of HMS in Boston, were appointed instructors in surgery and anatomy, respectively. Dr. Liu was later to become the distinguished superintendent of the Peking Union Medical College Hospital and Minister of Health in the Chinese Government at Nanking. Mr. Paul Hodges became instructor in physiology. He later was professor of radiology at Peking Union Medical College, where the author had the privilege of taking a post-graduate course under his direction.¹⁰

In the meantime, on December 16, 1913, a second memorial had been presented by the Executive Committee to the Rockefeller Foundation, stressing the need for raising endowment and income for more adequate salaries, so that faculty members could afford to devote full time to the school and the hospital. The Foundation deferred action on this petition, pending the recommendations of a Commission to be sent to China in the spring of 1914 to study and report on conditions of public health and medicine.

This Commission, headed by its president, Harry P. Judson of the University of Chicago, brought another

member of the Harvard Medical Faculty into the picture — Francis W. Peabody, a much loved and admired teacher at Harvard of that day and an assistant physician at the Peter Bent Brigham Hospital. The third member of the Commission was Mr. Roger S. Greene, Harvard College '01, then United States Consul General at Hankow, and later closely related to the administration of the China Medical Board and the Peking Union Medical College.

Journeying by the trans-Siberian railway, the Commission spent three months visiting secondary schools, both governmental and missionary. The Commission concluded that medical education would be a most effective contribution to China — "the need is great beyond any anticipation, and the opportunities for progress in all lines are equally great." Second, it emphasized that the work should be on a very large scale, with the understanding that it would involve a long time and that it should be "on the highest, practicable standard." Third, it strongly recommended that the project should be started at two points: in Peking and Shanghai. Fourth, it proposed that instructors in new medical schools should use English as the main language because of the lack of Chinese medical literature and the impracticability of translations. Finally, the Commission suggested that a system of fellowships be set up to enable selected Chinese medical graduates to do graduate work abroad, so that they might assume leadership responsibility in the new medical schools.

As a result of that report, the Rockefeller Foundation

10. Although in 1915-16 Dr. Hodges had finished only two years of his premedical work at the University of Wisconsin, he had already done advanced work in physiology and the use of x-ray. After that year he returned to finish his medical course at Washington University Medical School.

established the China Medical Board as an integral part of the Foundation's structure, analogous to the International Health Board. This report was also to have momentous consequences to Harvard's China undertaking, for in it were several proposals which were to affect its future:

(1.) That there be established in Shanghai a new institution, perhaps chartered under the laws of the State of New York, to be known as The Shanghai Medical College, or by some other name acceptable to the various interests concerned; (2.) That provision be made for cooperation with existing medical schools in and near Shanghai on such bases as would be advantageous to the cooperating schools, and would unite the medical educational forces and the principal hospitals of the entire lower Yangtze Valley contributory to Shanghai.¹¹

Those recommendations proved to be the death knell to the hopes so ardently fostered by President *Emeritus* Eliot and the members of the Corporation — that the Rockefeller Foundation would give adequate and continuing support to the Harvard Medical School of China. As a consequence, at the end of its fifth year, it became necessary to liquidate the School which had begun with such sanguine enthusiasm in 1911.

In the final report to the Executive Committee,¹² it was emphasized:

that when the School was inaugurated in 1911, it was well understood that the enterprise was undertaken as an experiment, and for a period limited to five years. Accordingly, the subscription list on which its finances depended was made a five-year list only.

In October, 1915, a special Commission of the China Medical Board, consisting of Dr. Wallace Buttrick, Director of the Board; Drs. William H. Welch and Simon Flexner; Mr. Roger S. Greene, Resident Director in China; and Dr. F. L. Gates, paid a visit of inspection to all the departments of the School.

As a result of that visit, it being obvious that funds were insufficient to carry the School beyond that academic year, the Executive Committee suggested that the China Medical Board of the Rockefeller Foundation take over the Harvard Medical School of China and eventually merge it with the larger institution recommended by the Foundation Commission.¹³ In response, the China Medical Board agreed to buy the Medical School's land in Shanghai, undertake the completion of the medical education for those students already enrolled, engage the services of Dr. Henry S. Houghton, give Dr. Dunlap a Fellowship for graduate study in the United States, and take over the endowment funds on the same terms by which they had been held by the

11. Fifth Annual Report of the Executive Committee, Cambridge, Mass., November, 1917, 14.

12. Sixth Regular Report of the Executive Committee, Cambridge, Mass., November, 1917, 7-14.

13. The cost of building and equipping the Medical College in Peking proved so much greater than anticipated, that ultimately the plan to establish a medical school in Shanghai had to be abandoned.

Harvard Medical School of China. The obligations to the Chinese Red Cross Society were fulfilled by the same agreement, and Dr. Houghton became director of the hospital.

The faculty for the fifth and final year, 1915-16, numbered 12 active members, headed by Charles W. Eliot, President *Emeritus* of Harvard University, as President. The other members were:

Henry S. Houghton, Professor of Tropical Medicine, Dean.

Albert M. Dunlap, Professor of Otology, Laryngology and Ophthalmology; Chief of Out-Patient Department.

Harold E. Eggers, Professor of Bacteriology and Pathology (on leave).

Carl A. Hedblom, Professor of Surgery; Acting Superintendent of the Hospital.

Hans Thue, Professor of Clinical Medicine.

Alson R. Kilgore, Instructor in Medicine.

J. Heng Liu, Instructor in Surgery.

Paul C. Hodges, Instructor in Physiology.

W. S. New, Demonstrator of Anatomy.

Harry B. Neagle, Instructor in Hygiene and Preventive Medicine.

Charles E. Crane, Instructor in Chemistry.

J. Hua Liu, Resident Physician.

The course of instruction covered five years, largely to accommodate for deficiencies of pre-medical education. Consequently, physics and inorganic chemistry were taught in the first year; anatomy dissection was continued in the second and third years; physical and laboratory diagnosis were not introduced until the third year; and clinical teaching in the wards and out-patient clinics was spread over the two final years.

In the hospital 50 teaching beds were in constant use, enabling 729 patients to be admitted. In the out-patient department, 3,416 new patients received attention at a level in keeping with Harvard Medical standards.

One example of the height of the scientific standard attained was the postmortem record. Even up to the present, those of us widely familiar with Asian medicine have observed the great resistance or inertia, even among university hospitals, to the performance of a sufficient number of autopsies to evaluate diagnostic and therapeutic accuracy and performance.

Hence, the record of Harvard Medical School in Shanghai was extraordinary. Postmortem examinations were performed in 25% of cases in 1913-14; 50%, 1914-15; and 76% during the final year. Dr. Jui Heng Liu '13 supervised the examination of all gross and microscopic postmortem and surgical specimens, prepared museum specimens for teaching purposes, and established the training school for technicians.

Record keeping, of course, was also according to university standards. Hence, in these and other highly com-

mendable ways the Harvard Medical School of China ended its 5-year record with flying colors!

The School was formally closed on June 30, 1916; and in a simple ceremony the following month, the graduating class, four Chinese, were given diplomas of the Harvard Medical School of China. Of the lower classes, 11 were recommended to the China Medical Board for scholarship aid in completing their education in China, Japan, and the United States; 6 took further pre-medical work at Harvard College in English, German, zoology, and chemistry, and one of them, Cheng-Hsiang Hu, entered my class in 1917 and received his degree with the rest of us in 1921.

In our senior class also was Sze Dau-Tsiang, one of the four who had received the diploma of the Harvard Medical School of China in 1916. After four years of hospital training in China, he received a second Harvard Medical School degree, which must make him quite unique in Harvard history.

Certainly one of the direct fruits of this enterprise, set in motion by the group of idealistic Harvard Medical students back in 1907, was to blaze a new trail for the introduction of the highest standards of scientific medicine to China, a trail leading to the establishment by the Rockefeller Foundation of the famous Peking Union Medical College, with its magnificent buildings, equipment, and faculty.

Thus, Harvard's dream of a great university medical center in China came true, under a different name, in another place, and to an extent which none could have visualized at the outset. One might have commented devoutly, "Man proposes and God disposes." There, faculty members from Harvard, such as Drs. Walter B. Cannon and William T. Councilman — who had participated at the Harvard end of the venture since its beginning — and Dean David Edsel, served as visiting professors.

In 1947, when the PUMC reopened after its wartime closure by the Japanese military, Dean C. Sidney Burwell; Dr. Alan Gregg, of the Rockefeller Foundation; and Dr. Harold Loucks, professor of surgery at the PUMC, formed an exploratory commission on the educational situation, with the result that the Rockefeller Foundation raised the endowment fund resources of the China Medical Board of New York, Inc. to \$22 million, making a total expenditure for the support of the Peking Union Medical College of \$44,944,665, the largest contribution which the Foundation ever made to a single objective. Even today, that original investment from a private capitalistic source is producing excellent dividends in a Marxist environment.

The buildings of the former PUMC still nourish the highest standards of medical care, education, and research on the Chinese mainland, in part of what is called now the Chinese Medical College and the Peking Union Hospital. Its eight-year curriculum, including the internship, is designed to produce teachers and research

workers for other medical schools. Expanded in size by a large new eleven-story building occupying a whole block, this center serves as the headquarters for the Chinese Academy of Medical Sciences. When Dr. Wilder Penfield of Montreal visited Communist China last year, he learned that the magnificent library of the former Peking Union Medical College, which had been preserved from Japanese destruction in World War II,¹⁴ has survived and developed with full Chinese support, enabling them, in Penfield's words to, "use the language of our professions. . . ."

With the departure of the Russian specialists from places of leadership in Peking, Chinese medical scientists, some trained at the PUMC and some at Harvard and other American universities, and their successors there, have for their reference and inspiration one of the greatest collections of American medical literature in the world, kept up to date by the Chinese government. Even in that hostile "climate," the "mustard seed" planted by a venturesome little Harvard group in 1911 has grown by 1963 into an impressive multi-branched "tree."

As Dr. Penfield put it, ". . . perhaps it is in science that the brotherhood of men is most clearly established. Scientists have always preferred to take the view that there are no national boundaries."

14. Wilder Penfield, "Oriental Renaissance in Education and Medicine," *Science*, Vol. 141, September 20, 1963, 1153-61.



The Graduate class of 1914. From left to right: Shen Sze-jen; Wu Ching-yuan; George Y. Char; Ts'en Tsung-hsien; Edward Kau.



Digging Deep

by David E. Leith '57

George Bass's team of archeologists has an ironic motto, "an ignorant diver is a happy diver," with which they respond to new information about hazards in diving. After four seasons' work off the coast of Turkey, the group's old hands have become high-pressure mechanics and physiologists, with a rueful awareness of the problems involved in working six days a week, twice a day, at depths of 120 feet.

Last summer, as physician for these divers from the University of Pennsylvania's University Museum, I helped in the completion of the careful excavation of a Byzantine merchant ship wrecked on a reef in the sixth century A.D.

Like most of the expedition's members I could offer not only diving experience, but more importantly a specific skill; in my case, medicine and a knowledge of hyperbaric physiology. Others, for example, were archeologists, artists, and photographers. Thus the team was well-educated; over half were at the graduate level or beyond. We included Turkish, French, German, Israeli, and American members, the last composing about half of the sixteen divers, who ranged from buoyant youths of 20 up to sedate old men of 34, and all were in good health.

Only by boat can one travel from our "base camp" in the Turkish sponge port of Bodrum — the ancient Halicarnassus and site of the tombs of Mausoleus — to the tiny island of Yassi Ada where we lived and worked for three months. Two hundred yards long, low-lying, and thinly covered with grass and scrub, Yassi Ada is the last in a short chain of islands reaching from the Turkish mainland toward Cos, in the Dodecanese. It was half an hour's journey from our water supply in the nearest village on the shore, Karatoprak, and we were two hours from Bodrum, where food and other supplies, equipment, and machine shop facilities were available. Five hours' drive to the north was Izmir, site of a NATO base, an American Air Force hospital, and the nearest airfield. Not until one reached Istanbul, however, were full-scale recompression chamber facilities to be found.

Like nearly everything that happened during the summer, our one violent storm was reported to be the most extraordinary occurrence in the memories of the oldest men in Karatoprak; and indeed, with that one exception, the skies were usually bright blue, the wind steady from the north at ten knots, and the temperature well moderated by the clear Aegean. Shorts and swim trunks were the uniform of the day, and after a month most of us had a "saturation tan," growing neither redder nor browner after a full day in the sun. The air was a treat for the

David E. Leith '57 is a research fellow, department of physiology, Harvard School of Public Health, and associate in surgery (anesthesia), Peter Bent Brigham Hospital. Dr. Leith received his diving training in Southern California while serving with the Marine Corps in the under-water demolition team. He is able to continue his interest in diving so far afield by courtesy of his "tolerant wife." Photographs used in the article were taken by Dr. Leith.

megalopolis-dwellers; we could see the farthest peaks of the austere Turkish coast and Greek islands which filled three quarters of our horizon.

The island literally abounded with grasshoppers and with lizards of several species, but bothersome insects were rare. Because the rat population was amply evident, poison was put out a few days before we occupied the island, and rats gave us no further concern.

Housing was gracious, a contemporary post-and-beam design, with canvas roof (see Taliesin West) and wire screen walls. This demountable structure was tied to a seven-foot stone windbreak wall, and overall covered a 16- by 48-foot rough concrete floor. Such a floor plan housed almost any number of good military surplus beds. Several tents supplemented this main "bachelors' officers' quarters." A generator provided light which made the evenings long and useful.

Within a week my first clinical challenge was presented in the form of a ragged, balding sea gull, so weak it couldn't even right itself, but only pecked feebly at our hands. Drawing heavily upon a knowledge of rodenticides, gleaned from questions in the National Board Examinations, I recognized in this syndrome the classic triad of thallium poisoning in sea gulls: severe motor dysfunction, cephalic aplumia, and querulousness. With unspoken reservations regarding the occurrence of ornithoses in sea birds, I characterized the patient as "moribund," washed my hands, and withdrew from the case. For the next two and a half months, however, the increasingly vigorous bird embarrassed me by patrolling the camp like a militant bantam chicken, scavenging food and intimidating our puppy.

Food and water supplies were plentiful, but to the horror of some of our guests — "you mean you don't soak them in *Clorox*!?" — we took no special precautions against contamination, and again this summer experience justified such an approach; we saw no evidence of parasitic infestation, and enteric illness was scattered, mild, brief, and self-limited. Milk and milk products we generally avoided. Lack of refrigeration cut down our meat supply, which we purchased once a week on market day in Bodrum, but eggs (uncertain) and goat cheese (excellent) were good substitutes. Beans, unhappily, were available in excess. Fresh fruit, vegetables, and whole-grain bread were served at every meal; the bread was dangerous only if dropped on one's foot. Our cook did his best, but toward August beans and rice in olive oil unaccountably lost their appeal as a luncheon menu; with the somewhat decreased food intake and working in 65-degree water at the sea bottom, many people lost weight — ten to fifteen pounds, or even more. In general, though, this was welcomed!

Sanitation was primitive and satisfactory. Trash and garbage were collected in tightly covered oil drums and periodically dumped down-current; and at the end of the island, a sheltered but current-swept cove hid a stone and concrete jetty where one could hunker down in the



Two views of Bodrum. This was the site of the tombs of Mausoleus, and also site of our "base camp."

most spectacular of all WC's, watching great blue seas roll down from Greece to shoal into green and erupt on the rocks in shreds of white water.

Besides our group of divers, the community included two captains of our hired "motor" (one was said to own the 30-foot caique, and the other its one-lung diesel engine), an "engineer," a cook, an enthusiastic pantry boy, and a vigorous old ex-smuggler Uncle Hasip, who wore the two hats of rowboat captain and diving barge night watchman. Uncle Hasip's astonishing facility in composing dirty songs was unfortunately as limited to Turkish as my comprehension was to English. The more experienced people in our group had learned a good deal of this very regular language, however, so that both working and social communication were free and easy. Our relations with the towns were good, and on an individual basis courtesy and curiosity characterized the hospitality we were shown. The economic advantages derived from our presence were, of course, obvious.

An interesting change is said to have occurred in the sponge industry in the last three years, which is perhaps related to our team's presence. This was a changeover from conventional "hard-hat" diving rigs to SCUBA gear supplied by hose from the surface — a cheaper and less clumsy technique. There is still, however, a general disregard of what we feel are essential safety measures in diving, and long, deep, cold dives are made without subsequent decompression. As a result, the additional nitrogen dissolved in the body during the dive does not have time to escape through the lungs and forms bubbles in the tissues and blood, creating the much-feared condition of "bends." More serious forms of this illness include joint pain, nervous system damage, and even death. Decompression illness is seldom treated by recompression among these divers, so that permanent disability is not uncommon.



Our diving was done from a barge anchored over the wreck; here we kept our four compressors, our one-man recompression chamber, diving gear, and tools, and here we spent two diving periods daily, from about 8:30 to 11:30 a.m. and from 3 to 6 p.m.; the noon break was spent in work, reading, writing letters, or snoozing.

Fairly rigid adherence to safe diving practices was maintained. The diving was done in pairs, the divers working in the same area on the bottom. Watches and knives were worn; the latter were used not only for digging but also for making signals by banging on air tanks and for other emergency use. A dive was terminated if one diver had to go on to his reserve air supply. Our decompression time was longer than that dictated by U. S. Navy tables, being calculated for a dive five minutes longer and ten feet deeper than the one actually made. This routine, while burdensome because of the length of time spent in idleness at the decompression stops, seemed worthwhile, and in the 1400 dives we made, there were no instances of symptoms seriously suggesting decompression illness. Should recompression have become necessary for bends or for air embolism, our chamber, with telephone and medical lock, was capable of pressures up to five atmospheres, the maximum necessary for U. S. Navy treatment tables; and any one of our four compressors could maintain the pressure and ventilation of the chamber. In our diving drills we found that four men could get a diver secured in the chamber and under pressure in about seven minutes, therefore we never dived with fewer than four men on the barge, and relief divers were also always at hand.

Since our dives were seldom deeper than 120 feet nor longer than 25 minutes, our decompression stops were only at 20 and 10 feet. A weighted drum with hand-holds was hung over the side at 10 feet, and beneath

that was suspended a concrete block at 20 feet; two reserve air hoses with regulators were always hanging to these stops, so that a diver need not surface for air in an emergency and thus increase his chances for bends.

While all our diving was done with standard double-hose Aqualung demand regulators, two types of air supply were used. The first was the usual double 70-cubic-foot tanks, worn on the back and charged with air at a pressure of 150 atmospheres. This was plenty for a 25-minute dive and the necessary decompression time, unless the diver was working very hard and consequently using his air up rapidly.

The second air supply method was a "hookah" or "narghile" rig, in which air at eight atmospheres was brought by hose from the surface to the regulator, this was worn on a "backpack" along with a separate small emergency air bottle and regulator. This system necessitated other safety precautions: a non-return valve in the hose near the diver so that hose breakage wouldn't result in lung "squeeze" and possible death; and a large air bank in the circuit at the surface as a reserve supply should the compressor fail.

For our purpose, neither technique had any clear superiority. The use of the narghile obviated the laborious chore of filling air tanks, but required hose-tenders and care by the diver to avoid fouling his line. For hard working dives, the narghile air supply was unlimited, but if the pressure were allowed to drop, as occasionally it did, through inattention, the diver quickly noticed difficulty in getting enough air for violent exertion.

A duty roster rotated the jobs of maintenance and operation of the compressors, reserve air tanks, and so on; a diving supervisor and a timer were also designated, the latter being the keeper of the log as well. Communication with the divers was difficult, but in fact little was required. Hammering on a pipe slung over the side, or jerking on an air hose, sufficed to signal "You have two more minutes" (since divers often removed their fins when doing delicate work, and needed warning when the time approached to leave the bottom), "come up" and for the narghile divers, such complex concepts as "more slack," "stop," and "pull me up." Divers on the bottom could communicate by hand signals or by notes on frosted plastic sheets on clipboards, but since the dives were planned in advance, the latter was seldom necessary.

A medical kit was kept on the barge with resuscitation gear including an AMBU bag and suction apparatus, endotracheal tubes and a homemade laryngoscope, Dextran, and appropriate drugs. None of these was ever used; but the surgical soap and adhesive tape were very popular for abrasions and cuts. Although there were moray eels of impressive size living in the wreck, a good deal of mutual respect prevented any conflict. Sea urchin spines and the painful wounds from the toxins on the spines of some local fish were the worst insult we got from the sea beasts and plants in the area, and few of these occurred in the line of duty!

I think that the most immediate danger we en-





countered was our own overconfidence and consequent laxity toward the end of the season, when we began to allow diver pairs to separate on the bottom, to dive without knives and watches at times, and to allow the hoses to become twisted with the danger of kinking. After a couple of incidents in which these dangers became apparent, we tightened up our procedures again.

Nitrogen narcosis, while not severe at these depths, was perfectly obvious in most of the divers. Judgment and flexibility were noticeably diminished; it was sometimes embarrassing to surface with no good reason at hand for having failed to complete an apparently easy task in the time available. Emotional lability was also striking, and divers sometimes surfaced still furious over minor irritations they experienced on the bottom — the narcosis is gone, but the mood lingers on. More than once, annoyed at my hose-tender's obtuseness, I braced my feet and gave a great yank on the hose, hoping to jerk him off the barge. Like a mildly inebriated person, I recognized the inappropriateness of this response, but just didn't care. I never succeeded, by the way.

Left: Uncle Hasip, the songwriter and ex-smuggler. Below: our boat, docked at Yassi Ada, used to ferry us out to the barge (in background) from which we dove.



Other diving hazards such as ear and sinus "squeeze" occurred rarely — most of them among the less experienced or less mature, who out of ignorance or a desire to demonstrate their toughness, tried to force pressure equalization in these cavities. Keeping track of these injuries required alertness, since the highly motivated, immature man in such a situation may tend to conceal facts which might keep him from the activity in which he wants to engage, and to be hostile toward the physician who seems to be trying to thwart his wishes. Thus the teaching of not only physics and physiology but also of safe and useful attitudes is one of the jobs of responsible members of a diving group.

It was to be expected that after three months of close association on the island, friction might arise among members of the team; there was some among a few people, but never enough to interfere with our work. Most of it took the form of personal animosities such as may arise in any group, and was largely confined to gossip and backbiting activity.

The "medical department" was equipped, like a battalion aid station, to care for all the minor problems to be expected in a healthy working outfit, and to provide for the emergency care and transportation of seriously ill patients. Supplies and equipment, though they deteriorate rapidly in this moist, salty climate, were quite adequate. Laboratory resources were slim, no microscope being yet available. In general, the summer's clinical load was very light, of course, and brought such minor things as headaches, skin ailments, mild gastrointestinal upsets, and minor trauma. One man was sent to the hospital with what proved to be infectious hepatitis; this precipitated a wholesale administration of gamma globulin. No other cases have come to my attention. Another diver got his hand tangled up in a compressor; both were out of commission as a result, the compressor with badly bent fan blades, the diver with a deep laceration which severed all the extensors of his left index finger, and chipping off some bone, entered the metacarpo-phalangeal joint. This intelligent, stoic German, probably our toughest and best diver and a really good underwater hunter, declined analgesic medications during his trip to Izmir for surgical repair.

I must not leave you with the notion that all was unrelieved, rigorous application to stern duty. The night before our weekly "no-diving" day, alcohol was allowed — perhaps "welcomed" would be more apt. We had frequent visits by tourists, some of them quite pleasant. Free-time skin diving and hunting in pairs were allowed, and fresh fish were a welcome addition to our diet. And in August, a long "vacation" weekend allowed the scholars to visit several ancient sites along the Turkish coast, while we ordinary guys — including the erudite director and his wife — relaxed in the Greek resort town of Cos, drinking beer, eating pastries, and pulling tourists' legs.

Everywhere in this region there is evidence of past human effort; the Temple of Aesculapius on Cos, the 14th century Crusaders' castle of St. Peter in Bodrum, the

old city gate of Halicarnassus, all combine to give even the historically naive a very real and immediate sense of the past, and the importance of the area in man's history. Extracting the information buried here is the absorbing task of the archeologist. Underwater archeology, sharing this challenge, is a growing field; and I believe that all responsible groups will want to have doctors during their summer seasons. The adventurous young physician who is interested in diving and high-pressure physiology should look into this fascinating opportunity.

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The author contemplating an archeological find after much deep digging.



WHAT BECOMES OF HARVARD MEDICAL STUDENTS?

by Osler L. Peterson

Dr. Osler L. Peterson, visiting professor of preventive medicine at Harvard, began this study with Dr. Fremont J. Lyden, a fellow at the Graduate School in Public Administration at Harvard, in 1960. Dr. Lyden, who conducted the study, became interested in medicine as a result of his previous studies of health insurance. Although medicine is far removed from his own field, he found that it, like other units that political scientists are more accustomed to studying, is composed of organizations with complex relationships, definable functions, and measurable work outputs. Dr. Peterson, Dr. Jack Geiger, then a fellow in the department of preventive medicine, Dr. Theodore Colton, statistician in the department, and Dr. Sol Levine, of the Harvard School of Public Health, acted as consultants.

When Sir James Paget made a survey of the practices of 1,000 of his former pupils at St. Bartholomew's Hospital, London, in 1869, few medical educators were concerned with the outcome of medical education. Presumably the stimulus for his study, the earliest of its kind, was explained in the first paragraph of his report:

It is said that, on entering the anatomical theater for one of his Introductory Lectures, Mr. Abernethy looked round at the crowd of pupils and exclaimed, as if with painful doubt, 'God help you all! What will become of you?'¹

Today schools of medicine are asking this question more urgently. Now that the growing population is demanding more and more doctors, and the competition from physics, chemistry and biology is making recruitment into medicine increasingly difficult, our schools need to know what happens to today's students, for only then will they be able to select tomorrow's doctors wisely.

What becomes of a medical student is influenced by many things, including the kind of student he is, and the school he chooses. The results of this study, which are presented here in part, cover the transition from medical school to internship to residency and, finally, to practice.

The 1950 and 1954 graduates of Harvard and 11 other prototype medical schools were selected as subjects for study. Each school possessed special characteristics of size, geographic location, and either private or public support, which, it was felt, might influence the later careers of the graduates. Since graduates of different medical schools enter academic medicine and specialty and general practice in varying proportions, care was taken to choose some schools that could be described as

oriented towards teaching and research and others which were directed toward either specialty or general practice.

A carefully tested questionnaire was sent out to 2000 doctors; and after considerable help from the deans of the individual schools, 94 per cent of the graduates of the 12 schools returned data related to their activities and what training they had received, as well as other facts about their past lives and problems. Most of them filled in the questionnaire with obvious care, and many added explanatory notes of some length. Two Harvard Medical School graduates with considerable research experience made a special effort to add some trenchant critiques of the study. The response of the Harvard group was slightly better than the average, though one class from another school sent in a 100 per cent return.

Analysis of the data from the questionnaires revealed that the graduates of the public and private schools were clearly different, and that they fell into two homogeneous groups. Naturally, inter-school differences existed within each group, but the differences between the public and private schools were much greater. In several important respects they did not overlap at all. This was particularly true of the proportions of each class that began hospital training with a rotating internship, took up general practice, and finally either obtained specialty board certification or entered the fields of teaching and research.

On the whole, Harvard graduates, about which this article is primarily concerned, were similar to those from other private medical schools. Table I gives some information about the internship and residency training of the various portions of the Harvard Medical School classes of '50 and '54. Those who ranked high in their class more frequently took straight internships in medicine in teaching hospitals, while the students with lower rank obtained rotating internships in non-teaching hospitals. Like the other private school graduates, a large number of Harvard graduates went on to residency training, while those from public schools took residencies in smaller proportions. The residency training of all the subjects averaged about three years. This indicates that the period of medical education and training for most doctors today has reached an overall total of eight years.

The probability of going on to residency training was found to be quite strongly related to whether the internship was obtained in a teaching or a non-teaching hospital. While 82 per cent of the Harvard graduates

1. Paget, J.: "What Becomes of Medical Students." *St. Bartholomew's Hospital Reports*, vol. V, Article XIX, 1869, pp. 238-242.

	Lower Third	Middle Third	Upper Third
<i>Hospital of Internship</i>			
Teaching	70.8	89.0	92.6
Non-teaching approved	20.2	9.9	3.2
Other	2.2	—	—
No response	6.7	1.1	4.3
<i>Total</i>	100.0	100.0	100.0
<i>Type of Internship</i>			
Rotating	47.2	36.3	17.0
Medicine	14.6	24.2	50.0
Surgery	21.3	24.2	19.1
Other	9.0	11.0	8.5
No response	7.9	4.4	5.3
<i>Total</i>	100.0	100.0	100.0
<i>Residency</i>			
With residency	87.7	92.3	92.6
Without residency	6.7	6.6	5.3
No response	5.6	1.1	2.1
<i>Total</i>	100.0	100.0	100.0

Table I. Hospital, type of internship and residency by class rank. (Per cent distributions for each third of class, 1950 and 1954 combined.)

who interned in a non-teaching hospital in a rotating service went on to residency, over 97 per cent of those who had a straight service in a teaching hospital continued their training.

The Medical College Admissions Test, (which only the HMS class of '54 recalled, since they were one of the first classes to take it), bore very much the same relationship to internship and residency training as class rank. This test, which is used to appraise ability and both technical and general information, has always occupied a somewhat uncertain place in selecting medical students, so that the establishment of a relationship between test scores and how doctors prepare themselves for practice, will probably add to its usefulness. MCAT scores were also related to the field of practice selected by the '54 graduates.

The second table shows the type of practice selected by these two HMS classes. As is well known, few Harvard men enter general practice. The majority of those who did, apparently did so by choice, since most of them obtained good training and some could have described themselves as specialists equally well. About a third of the public school graduates enter general practice — more than twice the proportion of private school graduates. In all schools, interest in general practice decreased over the four years, which forewarns of a serious problem: who will replace the general practitioner?

The bulk of Harvard Medical School graduates went into medicine, surgery, or academic or research careers,

while psychiatry ranked somewhat lower in fourth place. The specialties selected by HMS graduates are, on the whole, similar to those chosen by all private school graduates. There is, of course, variation between graduates of different private schools; a higher proportion of HMS graduates end up in research and teaching, and a slightly larger proportion chooses surgical careers.

The survey also revealed a number of interesting relationships between specialization and class rank. The internists and teaching/research groups, for example, came more frequently from the top than from the bottom third of the class, while the surgeons came from all parts of their class. The psychiatrists tended to rank toward the bottom of their class but scored high on the MCAT, a finding previously reported by Daniel Funkenstein.² If the people in teaching and research were to be redistributed among the clinical fields in which they had been trained, these relationships remained essentially the same.

Many things other than academic performance — family background, economic circumstances, or attitudes while in medical school, and marriage during those four years — can affect the outcome of the medical educational process in terms of the amount and type of training received and the field of practice selected by the individual doctor. Other data related to these questions are now under study, to be presented later in book form.

2. Funkenstein, D. E.: "Failure to Graduate from Medical School." *J. Med. Ed.*, vol. 37, pp. 588-603, June, 1962.

Field of Practice	Class of 1950	Class of 1954
General practice	4.7	6.5
Medicine*	22.8	15.8
Surgery	28.3	26.6
Teaching/Research	23.6	26.6
Psychiatry	6.3	13.0
Pediatrics	6.3	5.8
Ob-Gyn	1.6	1.4
EENT	—	—
Other	5.5	4.3
Not in practice	0.8	—
<i>Total</i>	100.0	100.0

*Includes dermatology and neurology.

Table II. Field of practice by year of graduation from Harvard. (Per cent distribution for graduates of 1950 and 1954.)

MEDICI IN

Somewhere in the third year of surgical residency, when it seemed as if training would never end, when the rotations seemed less fruitful than they ought to be, and when it appeared we would never have a normal family life, my wife and I decided to spend a year abroad. There were specifications to be met, however. I wanted an extra year in chest surgery. Since we have three children, the extra effort of non-English speaking nations or tropical climes did not seem worthwhile. On the other hand, we did not want more of the same academic life. This tended to rule out the big cities and the university centers.

Out of the depths of past reading I recalled the name of Griffith, a chest surgeon known to be the first to carry out successful repair of traumatic rupture of the bronchus. Coincidentally, at the Massachusetts General Hospital, we had for a year a fine Canadian "chap" who had spent some time in a place called Hawkmoor Chest Hospital near the small town of Bovey Tracey in Devon, a county in the South-West of England. J. L. Griffith, F.R.C.S., happened to be the consultant surgeon for Devon and the chief surgeon of the hospital. My Canadian friend encouraged me to apply for the post of surgical registrar to Mr. Griffith and described "glorious Devon" in glowing terms, with the help of exquisite slides. The idea of spending a year with this man in these surroundings appealed to our imagination and I applied for the job. After the proper British paper-chase between "the party of the first part" (me) and "the party of the second part" (the national health service local committee), I was accepted.

Midst fond farewells from our dubious families (nobody, even the British, had ever heard of Hawkmoor



Hawkmoor Chest Hospital . . .

DUMNONII



... This view looks south.

by Anthony S. Patton '58

Chest Hospital or Bovey Tracey), we set sail in mid December, 1962, for a hair-raising trip on the Queen Mary. (It was primarily British hair that was raised.) Children under five years seemed to be a bit much even for the unflappable waiters on this old Cunard ship. They drew straws, I am sure, to see whose turn it was for porridge on the black coat or orange juice on the trousers. A friend with a similar experience put it quite well: "the first three days you try to keep the monsters from falling over, the last three you try to push them in."

Although we thought we knew as much as anyone could about visiting a foreign nation, we soon found out that there was much to learn, *especially* about England. From my prepackaged American concepts, I expected to find a country of big cities and semi-detached suburbs, bowlers and umbrellas, smog, fog, double-decker buses, and many, many American tourists. There is some truth in this, I suppose, but we found ourselves in a fantastic, deep green, unspoiled rural area, where we saw no American tourists, no American cars, and only the smoke from the local pottery. The weather is very "misty moisty," however, (the English are *so* proud of a good day — "smashing 'e is"), and much to the delight of our three-year-old boy, the English have double decker buses even in the country, where the lanes are narrow enough to touch both their sides. (During the Bad Winter of 1963 two way traffic shared a single, frozen rut.)

Anthony Patton, who has been living for the past year with his wife and family in England, will return to Massachusetts General in 1964.

The West Country of England has treasures well known to the English, but for some reason Americans rarely venture here. We could have predicted this by the number of people who noted our "compact" American station wagon, which is viewed as a behemoth in England. As we drove from Southampton into Devon, we became more and more of a curiosity, accustoming ourselves to faces peering through the windshield, whether we were inside or not. We found one tweedy type measuring the car's length with a folding yardstick, which he snapped back into his pocket with infinite satisfaction and the comment that *his* car was actually three inches longer.

Motoring is taken very seriously in England, and auto performance is a favorite topic. Automatic transmission and leg room, along with refrigerators, central heating, and almost any innovation since the days of good Queen Victoria, are usually thought to be somewhat immoral and contributory to the decline of the Western World.

As we drove along, our already very narrow main road grew almost impassable, and we had to back up a few times to let other cars through. When we finally arrived in the local town, Bovey Tracey, we had plenty of time to admire its quaintness, while we waited for a herd of cows on the road at milking time.

Despite our dismay with the narrow road, we were treated to some of the most magnificent scenery I have ever seen. We were over-

whelmed by the deep, luscious green of the countryside and the vast, rolling farmland, which are divided from the roadside by huge hedges that tower over a man's head and harbor Roman coins and other ancient relics. The hills are divided neatly into tilled plots and blend subtly into the vast and desolate moors beyond. These are huge, treeless plateaus, flowered in purple and yellow and dotted with granite formations called "tors" (a Celtic word meaning tower). The farms are full of sheep, pigs, goats, hens and cattle; the moors have marvelous black and white woolly cattle, wild rams, sheep, and the famous Dartmoor ponies, who wander up to the road and beg for food.

In this land devoid of billboards and occasionally even telephone lines, we could imagine King Richard the Lion Hearted and his entourage coming around the next bend in the road. While the farms are ancient buildings, some of which date to pre-Norman times, the moors have actually been inhabited for 4,000 years. In the main city of Devon, Exeter, which was certainly present before the Romans, the first foundations of the huge cathedral were laid in 900 A.D. The town, Bovey Tracey, two twisted miles from the hospital, was named after the local river, the Bovey, and the De Tracey family, who had owned the area since it was deeded to them by William the Conqueror. One early Lord De Tracey was a member of the foursome who murdered Thomas à Becket, the Archbishop of Canterbury. Legend has it that he built the beautiful local church in atonement for his part in this villainous act. Part of the Matron's home, once a farm called Hawkmoor, was mentioned in the Domesday Book.





I began to worry about what kind of a chest hospital existed here and now in the land of the Dumnonii, as the Romans called the Celts who lived in this area. Eventually we found it, on the side of a hill in the midst of farmland. The overall effect was impressive — a rambling, open collection of reasonably new and very old buildings situated to overlook the moors and the countryside. With the lights just blinking on in the twilight, the scene resembled a fairy kingdom.

Our impressions of beauty, tradition, and quaintness were soon secondary; we found where we were to live. The cottages that house the hospital staff cling to each other in the fashion the British call "semi-detached." What the British call it did not really matter; at this point we called it many things.

Our misery was acute. We were "endman" in a line of cottages, and there was no heating, of course, except from the little coal fire that we came to hate and love. It could be lighted, as we learned, by exactly one and a half pages of the *London Times*, two sides of a broken up fruit crate, and five lumps of coal. (One may cheat by throwing a lump of paraffin in the middle.) The floor was concrete (the British euphemism is "composition"), with nothing over it except a dirty under mat or two. The furniture, basic and meager, would have been thrown out of a slum. Our five-year-old gleefully pointed that towels had been substituted for curtains. (Although they were not really towels, the size, shape, and texture were the same.)

We were unperturbed by the lack of a refrigerator, for as soon as the Big Freeze set in, we had ice on the floors and on the inside of the windows. The dish towels froze together. The outside toilet never worried us either, as it was frozen solid for three months. There was an inside bathroom, but, for some ancient and obscure reason we have yet to ferret out, the British must, by law, put their water and drain pipes outside the buildings. Frozen pipes can be averted, according to local lore, by; (a) letting the water run night and day, or, (b) thawing the pipes in the morning by pouring a bucket or two of boiling water over them. The latter method means leaping up the stairs and into the bathtub, hot kettle in hand, flinging open the windows, and heaving the water at the side of the house. One runs the risk of scalding one's hands with steam and appearing slightly ridiculous to neighbors — no worry though, for they are usually doing the same thing. When the kettle dropped two flights on its spout, it provided much merriment for our three little elves.

The first frigid night we were cheered by the matron's welcoming gift, a potted hyacinth which looked as we felt, slightly forlorn but determined to Bloom and Be Brave. There was not a crumb of food in sight. Since we had just arrived after driving all day from Southampton, brought nothing edible with us, and the stores were closed, there appeared to be some possibility of starving as well as freezing. Nothing to be done — we dragged the screaming children to a local hotel. The

waiter was polite but unconvinced that we were not spies from a space ship.

Back at our new home, with a neighbor's help we finally lit our little coal fire, which promptly belched forth great clouds of smoke into the room. It had something to do with the draughts in the area. At any rate, the Health Service said they had a file on the problem — and still do, I am sure.

The day before Christmas it was warmer outside than in, and the day after began the worst winter in modern English history. For three months, continual snow, ice and cold were paralleled by our own more or less continuous colds and baby's croup. Life in Devon is slower, and efficiency does not have the same value it does in Boston. The casual rate of living came to a snow-bound, ice-ridden, crunching, grinding halt in the famous winter of 1963. Aided by multiple electric heaters, neighbors, and a marvelous little truly Devonshire domestic who came in five hours a day, we "stuck it," as the British say, through the first weeks of snow and cold. Periodically we jumped into the car and turned on the heater to thaw out, keeping our hands warm at the fire we thought we had lit under our local hospital committee to improve our present conditions. We then thawed sufficiently to grasp the fact that our electric bill for the first six weeks was over one hundred dollars.

After six months we finally moved into a decent flat. The workings of committees, the current brand of British civil servant, the relationship between doctors and administrators, all of which are superimposed on the basic British personality and Method of Doing Things, would be a story in itself, paralleled only by *Alice in Wonderland*. Suffice it, at the moment, to say that I was the Maddest Hatter at the tea party.

The frustration of trying to work within this framework of shifting responsibility — far-away committees who appear to exercise dictatorial rights while *in absentia* most of the time — and the apparent world-wide purgatory through which doctors in training must pass, is hard to imagine.

Domestic problems and cold aside, it did not take me long to realize that I was at a first rate chest hospital. (The contrast between this modern hospital and its primitive surroundings is something even the local British never understand.)

Its excellence is due largely to the past and present efforts of my chief, Mr. John L. Griffith, F.R.C.S., both a top grade surgeon and wise teacher, and Dr. Roy Midgely, F.R.C.P., the superintendent, a skillful administrator who built this tuberculosis sanatorium to international prominence. With only one permanent surgeon, it manages to do as many as three to four hundred thoracotomies a year, with all the allied special studies conceivable. A

physiologist-physician-farmer named Dr. Geoffrey Trobridge, F.R.C.P., has also built a laboratory, which, I am sure, could match any laboratory in the world for pre-operative chest evaluation. It includes all the respiratory gases, cardiac catheterizations, and equipment for the usual respiratory studies as well. More remarkable, Dr. Trobridge has built much of the equipment himself, while waiting for committee authorization. The surgical excellence of Hawkmoor is also amazing; not only because it has attracted a high caliber of men to its isolated geographic location, but also because it had so much difficulty in obtaining equipment and what we would consider basic laboratory investigations.

T

he English approach to medicine adds to its quality. While in America we tend to stress laboratory tests, the English emphasize basic points of anatomy and physical factors. In my experience, most of the esophagectomies were done without any electrolyte studies. Patients were fed, fluid at least, 24 hours after surgery, and only one severe electrolyte difficulty appeared, in an unsuspected Addisonian. Almost everyone had a week of excellent preoperative physiotherapy instruction and visiting. While x-ray facilities were not extensive, the quality of the films was excellent, bronchograms and angiograms being sharp and clear.

Another factor that makes this isolated hospital great is the attitude of the sisters or chief nurses on most of the wards. The surgical sister has 42 people on her ward and cares for them with the help of only a house staff of one registrar, and one junior medical officer. She is several residents and interns combined. All the nurses consider it degrading to call the doctor to order enemas, pain medication, obvious routine work-up studies, including x-rays, EKG's, and respiratory function. The sister manages all tubes and wounds. Although I used to visit the patients every day, it was hardly necessary from a physical standpoint. I was always called well in advance of the rare trouble, and the usual fever work-up studies had already been done.

More than just the doctors and the nurses, there are the patients themselves. I now understand why the English beat the Germans, and how the English bear their wet, bone-penetrating climate year after year. They appear to be an astonishingly sturdy people, with a congenitally stiff upper lip and the capacity to stand physical discomfort with little complaint. A typical example was an old but fit fellow upon whom we had done a right radical pneumonectomy with complete mediastinal clean-out, excision of the diaphragm, a large piece of pericardium, and a large piece of atrium. On the second day after surgery, I made my usual visit and noted he was slightly uncomfortable. I asked him what seemed to be the trouble, and in a calm voice he answered, "The pain is excruciating." I inquired what



View of Hawkmoor Chest Hospital looking west over the moor.

pain medicine he was taking. Pain medicine? He hadn't had an aspirin since the operation.

This is by no means unusual. After the first very small dose of opiate the sisters expect no requests. One night I was called by the sister on duty, who wanted me to know that a certain patient, recovering from a very radical operation, wished to have pain medicine for the third postop night in a row; she was concerned about addiction. I first thought this stoicism applied only to the "stout men of Devon," but I soon found articles in British medical literature that supported this view to extreme lengths. One article, on the prophylaxis of chronic bronchitis, suggested that a "hardening up process" is a good thing. The article recommended that windows be flung open over sleeping babes, heaters turned off, and cotton blankets (if any) replace the wool covering. While this approach may seem somewhat uncivilized to Americans, it certainly makes postoperative care quicker for the patient and easier for the surgeon.

The quality of anesthesia is the final factor in Hawkmoor's success. I had started a study at home on post-

operative hypotension and atelectasis. Unfortunately (or fortunately) these factors were absent at Hawkmoor, largely because of expert anesthesia. Patients return to the ward awake, sucking dry, and breathing on their own. Most of the anesthesia is administered by a delightful Victorian lady, who, on first impression, would seem more at home presiding over a tea party. One of the most amusing sights I experienced at Hawkmoor was to watch this obviously aristocratic woman pass an endotracheal tube with grace and speed. She never complained about the most dubious risks and made endoscopies safer and quicker under general anesthesia than under local. Her sense of duty and conscientiousness about postoperative care taught me a great deal about hypotension and atelectasis, without referral to blood gases and blood volumes.

From the medical point of view, the only criticism which might be made about Hawkmoor is of its relaxed atmosphere. The day's operating starts around ten o'clock and is interrupted by a full hour for lunch, served on a table cloth by buxom Devon maids, in a

room that overlooks the moors and hills. The afternoon case is followed by a high tea, with cakes and sandwiches. Somewhere around eight or nine the day's operating ends. While I was home every evening, this casual atmosphere was both galling and welcome to this "up and at 'em" American-trained surgeon. I often wondered what the British do before they start the work of the day, but having had to light their wretched coal fires and having seen their pre-occupation with gardens and flowers, it is now quite understandable. Surely I would never want to change them.

M

any things stand out in our experience at Hawkmoor. There is the tremendous amount of surgery that I was able to do under Mr. Griffith's tutelage. There is also the unbelievable number of patients with carcinomas of lung and esophagus that entered our hospital. Carcinoma of the lung and hiatus hernia seemed to be the two most common diseases a Devon chest surgeon sees. Series of 2,000 in each of these diseases in England is not unusual and staggered my imagination. It seemed to me that the English understanding of the hiatus hernia problem in particular surpassed our knowledge at home.

Another memorable feature of the year in England was the school experience of our oldest child. At age five or earlier, the British child is expected to go to school daily, from 9 a.m. until 3:40 p.m. in the afternoon. At first this sounded a bit much for our girl, who was used to three mornings a week at home; but she adjusted nicely. Only twenty pupils and two teachers gathered in the tiny schoolhouse, situated in a lovely medieval village, replete with thatched roofs, that was tucked away in a valley — or cleave — beside the moor. The children had their hot dinner nearby in an old house, allegedly of Saxon origin. We suspected a bit of historical exaggeration in this claim, until we found an

Anglo Saxon tomb in the village church whose main structure was built around the time of King John in 1200. It was a great joy to watch our little girl in the ancient May Day procession and taking part in the dance around the pole in old English fashion. Just after her fifth birthday, moreover, she was able to read and do simple arithmetic fluently.

Some of the most unforgettable times were those spent with the people of Devon. While Americans tend to consider England a homogeneous country, it is actually made up of Celts, Romans, Vikings, Saxons, Danes, and Normans; Devon has them all. The myth about English inhospitality was demolished by our experience. Our social calendar was always too full. My wife had coffee with Commander and Mrs. Raleigh Gilbert, descendants of the famous explorer families, in their castle home at Compton, but we were equally well treated by the Devon farmer with his thick and picturesque speech. The Devonians seemed curious about Americans, but I am sure most of their hospitality was sincere and generous.

The only anti-Americanism we found was directed to the recent long range forecasts made by our weather bureau. One has to live here to believe that constant cloudiness, much rain and occasional sunny periods comprise the four seasons of the year. The "cheek" of the Americans (after a poor summer) to predict, in advance, another horrible month was a serious blow to the sinking British international pride. We left knowing, however, that they had much to be proud of. Two old Devon poems seemed to sum it up:—

O' Devon, mother Devon
Dear country of the West
Thine is the Joy of living
Thine is the peace of rest.

Or in a more gastronomic tone:

For oh, it's the herrings and the good brown beef,
And the cider and the cream so white,
Oh they are the making of the jolly Devon lads
For to play and eke to fight.





The Harvard Medical Society

In this issue the Bulletin is pleased to present summaries of the first two Harvard Medical Society meetings held this year. Although the Society has never deviated from the purpose of communicating current developments in medical science, it has continually modified its means to this aim, ever since Drs. Cushing and Christian incepted it in 1912. For the first thirty some years of its existence, the Society devoted its meetings largely to clinical material. Some time after World War II, however, when research activity began to mushroom so rapidly, the Society began inviting heads of departments to arrange presentations on current researches by members of their staffs. This program functioned up through the mid-1950's, until officers of the Society found that the increasing numbers of other meetings and new periodicals were creating too much overlap in subject matter. They therefore began to select timely topics, present them in the

form of symposia, and leave their arrangement to chairmen considered competent in the subjects presented. This year, in response to still another and more pressing need, that the student should have more opportunity to discuss current subjects with the faculty in pleasant and informal situations, the Society has invited professors to make short, individual talks, giving each the freedom to choose whatever subject he considers of most acute and current interest. Four professors are scheduled for each meeting, and while two of these are chosen from clinical fields and two from pre-clinical ones, their talks bear no relation to one another. Students receive individual invitations to attend, and discussion sessions follow each talk. The crowded amphitheater above will testify to the success of this new program, and beginning with the next meeting, all those invited will retire to "refresh themselves" at Vanderbilt.



Dr. Munson

An Unsuspected Hypocalcemic Principle in the Thyroid Gland

Paul L. Munson, Professor of Pharmacology in the Harvard School of Dental Medicine

I frankly admitted that our work on "An Unsuspected Hypocalcemic Principle in the Thyroid Gland" is an example of serendipity. In 1950 Dr. Roy Greep introduced me to the parathyroidectomy of rats by hot wire cautery. This operation is followed within a few hours by a marked fall in serum calcium. In 1958, Dr. Geraldine F. Gauthier, then a graduate student working in our laboratory, discovered that if the rats' parathyroid glands were removed by surgical excision, the serum calcium did not fall nearly as far as it did after parathyroidectomy by cautery.

Several years later, Dr. Philip F. Hirsch and I began a thorough investigation of this discrepancy. It soon became evident that it was cautery of the adjacent thyroid gland, not of the parathyroid glands, that was responsible for the excessive fall in serum calcium. It seemed likely that cautery might release a hypocalcemic agent from the thyroid gland. Our next step was to test this hypothesis by preparation and injection of thyroid extracts into intact rats. Simple neutral, acid, and basic extracts were active, and the injection of as little as one-third of a rat thyroid gland caused a fall of 25 to 30% in the serum calcium within 60 minutes. Thyroid ex-

tracts from rabbits, dogs, hogs, cattle and monkeys also were active, while thyroxine, triiodothyronine, and extracts of numerous other tissues had no effect on the serum calcium.

Although purification of the thyroid factor has just begun, the first step in the purification, which involves removal of thyroglobulin and other inactive material by high speed centrifugation, has already yielded an active fraction, effective at a dose of 50 micrograins. This represents a 9-fold concentration of activity over the initial extract. Available evidence indicates that the thyroid factor, like parathyroid hormone, is a polypeptide.

Although we favor bone as the principal site of action of the thyroid hypocalcemic factor, our experiments to date have excluded only the kidney, since acutely nephrectomized rats respond as well as intact rats.

This thyroid factor may be identical to the hormone, "calcitonin," which, as Dr. D. H. Copp of Vancouver has suggested, may work in opposition to the classic parathyroid hormone to regulate the blood calcium level. Physiological experiments by Copp and by MacIntyre in London support the parathyroid gland as the site of origin of calcitonin, but the evidence for an active hypocalcemic extract of parathyroid tissue is not very strong. In contrast, the hypocalcemic substance that we have discovered and tentatively named "thyrocalcitonin," is present in the thyroid gland in high concentration and is easily extracted from it.

Whether or not thyrocalcitonin proves to be a hormone of significance in normal physiology, it certainly is of considerable pharmacological interest, and it may conceivably find some useful place in therapeutics.

Intrarenal Distribution of Nutrient Blood Flow Determined with Krypton⁸⁵ in the Unanesthetized Dog

Abraham C. Barger '43A, Professor of Physiology

I wish to describe for the measurement, by means of Kr⁸⁵, of intrarenal nutrient blood flow distribution in the unanesthetized dog. Injection of the isotope into the renal artery is followed by a multi-exponential disappearance curve, which can be obtained by external monitoring with a scintillation detector. In acute experiments autoradiographs have demonstrated that the first exponential component represents cortical blood flow; the second, outer medullary blood flow; the third, inner medullary blood flow; and the fourth, hilar and perirenal fat blood flow. The average cortical blood flow in 65 experiments in five kidneys of four unanesthetized dogs was 474 ml/100g/min, the outer medullary, 132 ml/100g/min, and the inner medullary, 17 ml/100g/min. Eighty per cent of the radioactivity was distributed initially to the cortex, 16% to the outer medulla, and 2% to the inner medulla. The hilar and perirenal fat, which receives approximately 2% of the initial radioactivity, was estimated to have a flow rate of

21 ml/100g/min. In addition, a method for the rapid determination of serial cortical blood flow rates has been described. The importance of these findings has been discussed with reference to the anatomy of the kidney, to the countercurrent concept as it applies to passive reabsorption of lipid soluble substances, and to the maintenance of an osmotic gradient. In addition, preliminary experiments indicate that cortical blood flow is reduced in congestive heart failure, and hemorrhagic hypotension, at a time when medullary blood flow may be relatively unchanged.

(These experiments have been conducted by Drs. G. T. Thorburn, H. H. Kopald, J. Alan Herd, M. Hollenberg, C. C. C. O'Morchoe, S. Carriere, H. Sparks and A. C. Barger)

The Challenge of Dealing Scientifically with Some of the Intangibles of Medicine

Nathan B. Talbot '36, Professor of Pediatrics

In recognition of the fact that behavior problems now comprise a large part of pediatrics, the Child Behavior Unit was formed within the framework of the Children's Service of the Massachusetts General Hospital five years ago. The first aim of this Unit, which is now headed by Dr. Richard B. Kearsley, was to develop clinically practicable methods for gathering information on the behavioral status and socio-psychologic environment of children in a form suitable for critical evaluation by statistical and other scientific standards. For this purpose we developed a self-administered questionnaire booklet in which parents could indicate their perception of their child's behavior and of the relative intensity with which they were subjecting their child to approval vs. disapproval, disciplinary control vs. freedom, and other intangible socio-psychologic factors. Thus far, data has been gathered from the parents of over 1500 children, of whom about 1300 were taken from a general school population in and around Boston, and 200 were known to have moderate to marked behavioral disorders of various sorts. The results we obtained indicate that it will be possible to build clinically useful, normal standards of reference with respect to the behavioral status of children and to use these as an aid in the clinical recognition of behavioral disturbances. They also indicate that beyond the limits to the ranges over which the intensity of parental approval, discipline, etc. can vary. There is risk of behavioral illness and that a considerable number of the ordinary behavior problems of childhood may be occurring in association with the "socio-psychologic" under- or over-nutrition we had defined. Our work is now proceeding in the direction of developing means for preventing and, when necessary, correcting "socio-psychologic malnutrition" and for determining the effects of such measures on childhood health and development.

Pteridine Coenzyme in the Metabolism of Ethers Eugene P. Kennedy, Hamilton Kuhn Professor of Biological Chemistry

The substances known as batyl and chimyl alcohol are representatives of an interesting class of lipids of the general formula, $R-O-CH_2-CHOH-CH_2-OH$. These derivatives of glycerol contain long-chain alkyl residues in ether linkage, in place of the ester bonds found in ordinary glycerides, and have long been the subject of investigation and speculation. Lipids of this type were isolated from bone marrow many years ago, and numerous reports have offered suggestive but not clearly definitive evidence that they may somehow act as regulators of hemopoiesis in bone marrow. Indeed, there have been reports that glycerol ethers, when administered to animals and to human subjects, may display striking biological activity, attributable perhaps to their effect on bone marrow. Thus, it has been claimed that glycerol ethers may exert a protective effect against the effects of radiation, and may be of therapeutic value in certain cases of acute leukemia in children.

Nothing has been known about the detailed metabolism of glycerol ethers in the body. My collaborators, Dr. Marjory Lindberg, Dr. Alisa Tietz-Devir, and I became interested in the problem, primarily because the mechanism by which enzymes may attack and break the chemically resistant ether bond in structures of this kind is quite unknown and may be of general enzymological interest. Accordingly, we prepared batyl alcohol (stearyl

Dr. Talbot



glyceryl ether) in radioactive form and studied its fate in cell-free enzyme preparations from liver. An active system was discovered which oxidized and cleaved the stearyl residue, with the eventual formation of stearic acid. The system was found to require molecular oxygen, and several cofactors, the most interesting of which is an unusual pteridine, of the family of compounds related to folic acid. Further investigation revealed that a cycle of reactions involving the generation of a tetrahydropteridine occurs during the attack on the ether bond. (A similar system has been described by Dr. Seymour Kaufman in the metabolism of the amino acid phenylalanine.) Many of the characteristics of the system resemble those of the enzymes which catalyze the formation of thymidilic acid in bone marrow. It is known that regulation of thymidylate synthesis by folic acid antagonists, such as amethopterin, offers a promising avenue of approach for the control of certain types of leukemia. The possibility must therefore be explored that the claimed biological activity of glyceryl ethers may similarly be the result of the function of pteridine cofactors.

The Lymphocyte: A Cell of Special Interest to Surgeons Paul S. Russell, John Homans Professor of Surgery

My approach to this interesting cell bears the "shameless emphasis of the transplanter." I reviewed some of the evidence which implicates this cell as an important participant in the rejection of living homologous tissue grafts. Electron microscopic studies indicate that the cell changes its morphology to some extent during its participation in this immunologic process.

In clinical transplantation, selecting a donor who is a close blood relative is apparently very important. In kidney homotransplantation, recent reports indicate that success, for at least a number of months, can be expected in some one out of four or five instances when close relatives are used as donors. Where randomly selected donors are used, the success rate falls to one in twenty. It appears to be a matter of some urgency to develop means of selecting appropriate donors and recipients for clinical homotransplantation.

In some current experiments conducted by myself and Dr. J. G. Gray, we have been attempting to make use of the lymphocyte to perform a preliminary test of histocompatibility in order to select the most compatible donor from a pool of potential prospects. This test uses purified, living lymphocytes, prepared from the peripheral blood of the intended recipient, which are then injected intradermally into the individual of the donor panel. We have observed typical delayed skin reaction after the injection of some three to five million lymphocytes, the size of which we believe depends upon the degree of incompatibility which exists. Skin graft



Dr. Ewalt

tests from individuals receiving the lymphocytes to their donor have so far given us reason to hope that this test may prove to be a useful screening test for donor selection.

Stress: Myth, Menace, and Mystery Jack R. Ewalt, Bullard Professor of Psychiatry

Among the myths that surround this subject is the belief that we live in a world increasingly full of stressors. Although phenomena such as the A-bomb are stressors, their severity varies according to each individual's view of them. In a recent survey, we found that everyone is worried and anxious at times, and that one in four has believed that he was threatened with or undergoing a "nervous breakdown." However, these worries were not predominantly related to major world crises but to family, jobs, money and health.

Another common belief is that psychological stressors will produce somatic diseases of a specific type with a particular personality pattern. This myth dies hard, for no one studies their equally successful but healthy colleagues. If we did, we would quite likely find that the "coronary type" or ulcer profile are also profiles of success in contemporary America.

Many think that if we can eliminate man's ills by manipulation of society, we can also remove today's stressors. But what if we did not have these outside stressors

on which we displace our hostility? It might go hard on our parents, wives, children, and colleagues.

As to the menace of stress, we have evidence that the body responds to the individual's concept of stressors with profound biochemical changes. Many have demonstrated that response to a stressor varies among people and in the same person at different times. The biologic rhythms that seem to be related to time, season, and weather determine to some degree the extent and sometimes the nature of the response. Stressors can aggravate many diseases and perhaps help cause others.

The mystery of stress is that it has been found that a symptom complex or disease may be caused by disrupting any one of a group of interacting factors, some biologic, some psychologic, and some social. These findings suggest important guidelines for research into causes. Research directed toward correlations between some single chemical, social, or psychological stress and the appearance of a disease will not reveal significant information, even if partly valid.

Modern data handling procedures enable us to explore more facets in the same person and persons over a period of time. Thus we have not only controlled series, but we can also have each person serve as his own control through the course of his illness. What we do not always know, however, is what symptoms in a disease are due to a body's functioning at a different biologic

balance or imbalance, and what symptoms are signs of the organism's defense against the stressor. At this point there is much more speculation than evidence in the field; much work remains to be done, on many levels.

Studies in Transplantation of the Liver

Francis D. Moore, Moseley Professor of Surgery

The work of the Brigham group in liver transplantation began in 1958, when we were interested in the possibility that a very large mass of antigen, presented to the new host, might overwhelm the antibody-producing defenses.

The initial experiments were very difficult and unsuccessful. It took us many months before we could achieve a living dog at the end of the operation. The problems of metabolism without the liver present were not pressing, but the hemodynamic problems involved in cross-clamping both the inferior vena cava and the portal vein were very impressive. To solve this, we developed the bilateral low pressure, non-oxygenated, non-pumped venous shunts which have now become the standard operation for liver transplantation in various laboratories throughout the world, and in those few clinics who have attempted the operation in man. These depend on the use of special tubing to conduct the blood from the inferior vena cava to the right jugular vein and from the portal vein to the left jugular vein, during the anhepatic stage.

We could then view the histologic and biochemical sequences of liver rejection in the dog. An intrahepatic cholangiolitic type of obstructive jaundice with a rising bilirubin and alkaline phosphatase appeared in the early stages. By the 12th day the rejection process "spilled over" into the liver parenchyma, producing massive liver cell necrosis without thrombosis.

We found that the histological sequences of rejection could be abated by immunosuppressive chemotherapy. The round cell infiltration with plasma cells and lymphocytes and the early obstructive component can virtually be prevented. We have not, however, been able to obtain long-term liver-transplant survivals in the experimental animal, because of a vascular lesion which appears in the terminal arteriolar branches.

Injection studies made in collaboration with the department of pathology have very beautifully shown the location of these terminal arteriolar obstructive processes. They do not appear to be thrombotic, and their nature is still not clear.

Currently, we are leaving indwelling plastic cannulae in the portal vein and hepatic artery after liver transplantation, so that the actual sequence of vascular changes in the transplant can be followed roentgenographically in the life of the experimental animal.

The injections of vasodilating or anticoagulant drugs into these catheters solve those problems that have prevented long-term survival in animal and human liver transplantation.

Dr. Moore



Hypercorticotrophism: A Clinical Syndrome
George W. Thorn, Hersey Professor of the Theory and
Practice of Physic

Our knowledge of the manner in which the pituitary gland responds to stimuli has been greatly augmented by the recent discovery of cells in the hypothalamus which represent a regulatory center and which appear to elaborate or stimulate the secretion of a neurohumoral substance, "corticotrophin-releasing factor," or "CRF."

"CRF" increases adrenocortical hormonal secretion in the experimental animal with an intact pituitary. It has no measurable effect on the adrenal in the absence of the anterior pituitary gland.

Today we realize that Cushing's disease can be caused by primary tumors of the adrenal as well as by anaplastic neoplasms — the latter appear to secrete polypeptides resembling ACTH which stimulate adrenal cortical secretion. Theoretically one might postulate the development of Cushing's disorder from over- or uncontrolled activity

of the hypothalamic cells which liberate CRF and hence would "drive" the pituitary-ACTH mechanism.

Unfortunately, many patients with Cushing's syndrome due to excess ACTH secretion do not respond satisfactorily to x-ray therapy of the pituitary and have been subjected to total bilateral adrenalectomy. In a few instances, removal of the adrenal gland and cure of the Cushing syndrome have been followed some years later by tumor formation in the pituitary with extreme hyper-pigmentation of the body. This new syndrome, described by Dr. D. H. Nelson, Dr. J. W. Mekin, and myself, appears to be due to the loss of cortisol suppression of the pituitary, when the excess cortisol secretion is completely removed by adrenalectomy.

In addition to Dr. Cushing's suggestion that the syndrome which bears his name was caused by a pituitary tumor, it is now known that the syndrome may also be caused by primary adrenal and gonadal tumors which secrete adrenal steroids, by anaplastic tumors elsewhere (particularly carcinoma of the lung) which secrete ACTC or CRF — like polypeptides in excess, and possibly by primary excessive secretion by hypothalamic cells of "CRF."

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JOE VINCENT MEIGS 1892-1963

Whoever came in contact with Joe Vincent Meigs loved and admired him. All who did so feel an overwhelming sense of an irreparable loss when we realize that he died while returning from a Medical Meeting in Rochester, New York, after delivering a talk on his favorite subject, pelvic cancer. The day of his death was October 24th, 1963, the date of his 71st birthday.

Few men have had such impact on the lives of so many people, not only in the field of medicine but in the simple process of living. To all who knew him intimately as well as to those who were only acquaintances, he was always Joe. It is almost impossible to find a person that did not feel that Joe Meigs was a personal friend. Everyone trusted him instinctively and responded to his charm and warm personality. He was a genuinely modest, humble and loveable man, heavily endowed with compassion and understanding.

No one loved medicine any more than he did, and few have contributed as much. We speak today of the triad, patient care, teaching and research; Joe Vincent Meigs was outstanding in all three. He not only achieved brilliant results in each

of these areas, but he inspired many others, by example, to make similar contributions. On learning of Dr. Meigs' death, an eminent professor at one of the Nation's most distinguished medical schools observed, "I don't suppose there is anyone in medicine who had more influence on my career than did Joe Meigs."

Dr. Meigs' greatest assets in medicine as well as in life were his love of family, his interest in his fellow man, his inquisitive nature, his enthusiasm, his integrity and his unbelievable capacity to work. To him medicine was not work but a game in which, by playing it well, he found the greatest enjoyment. A great sports writer once wrote, "It matters not whether you win or lose but how you played the game." No one ever played harder or better than Joe Meigs. Whether working with him as a resident on his service or as an associate, it was impossible not to catch this spirit. You were never told that you must do something — you simply went out and tried to do it, because this seemed to be the normal thing to do.

Acclaimed as one of the foremost gynecologists in the world, it is not surprising that Dr. Meigs was an active, participating member in more than a score of national surgical, gynecological, obstetrical and scientific societies. Three universities conferred honorary degrees upon him.

The citation for the Doctor of Science degree from Northwestern in 1959 emphasized Dr. Meigs' "ability to combine successfully the role of research investigator and clinical surgeon." This quality was also widely recognized abroad and was one of the basic reasons why he received Honorary membership in 15 foreign medical societies. If it is true that nations of the world have a greater chance of achieving mutual understanding and trust through medical science than through any other means, then this country never had a more effective ambassador than Joe Vincent Meigs.

Perhaps the honor that pleased him most was the establishment of the Joe Vincent Meigs Professorship of Gynecology at the Harvard Medical School. This chair, which was

created in 1962, was made possible by the generous contributions from his friends, colleagues and former patients. It was a source of great satisfaction to him that the first occupant of the chair was a former pupil and associate.

Joe Vincent Meigs received his early education at Princeton, from which he graduated in 1915. Next to his love of family and medicine, Joe loved Princeton. His fellow Princetonians are as proud of him as are the Alumni of Harvard Medical School and the Massachusetts General Hospital.

To record all of Meigs' accomplishments in the field of gynecology, particularly in pelvic cancer, would be a monumental task. His interest in cancer is widely known and his ideas on the role of surgery in treating cancer of the female genital tract have been widely accepted and applied. They stem largely from his extensive experience at the Massachusetts State Hospital for Cancer at Pondville, which he acquired over the 30 years during which he acted as chief of its division of pelvic cancer.

With his solid background in surgery and his basic interest in pathology, Dr. Meigs was primarily concerned with how and why things happened rather than merely with the mechanics of doing them. He had an uncanny ability to communicate. This becomes very evident as one reads any one of his 150 manuscripts or the six books he wrote or edited.

The record does not show the multitude of essays which he inspired others to write. An excellent example of this was Dr. Meigs' early and whole-hearted sponsorship of the vaginal smear technique for the early detection of genital cancer in women. Dr. Papanicolaou had reported on his original observations in 1928; but, as he said, the method, which has meant so much to womenkind, would have lain fallow had it not been for a few clinicians with the vision to recognize its importance. Dr. Meigs was one of them. Combining talents with Dr. Maurice Fremont-Smith, he created one of the earliest and most famous laboratories in the field of cytology. The scientific information flowing

from the Vincent Memorial Laboratory so popularized the Papanicolaou technique that women today are not only offered the test, they demand it.

One cannot write about the life and achievements of Joe Vincent Meigs without mentioning the Massachusetts General Hospital and the Vincent Memorial Hospital, its affiliate, because he was the motivating force that brought these great institutions together. He was justifiably proud of the impressive stream of residents who passed through his teaching program. All of them who had the experience completed their service conscious of the fact that they had indeed been fortunate to have been associated with an outstanding figure. All of them developed a burning desire to "go thou and do likewise."

LANGDON PARSONS '27
Director, Alumni Relations

DONALD STORRS KING 1889-1963

Those who were privileged to know Donald King will never forget him or his strength of character, which drove him quietly and persistently toward what was good, what was right, and what was needed. Osler's phrase, in his "Way of Life" describes him well; he was "one of the great souls that make up the moral radium of the world." These qualities of character caused him to consider the ministry, teaching, and medicine for his life's work, but he chose medicine as the field in which he thought he could be of greatest service. His friendly comfortableness, his loyalty, and his keen and quiet sense of humor endeared him to everyone.

Don King was born in Oberlin, Ohio, on June 19, 1889. His father, Henry Churchill King, was the President of Oberlin College for many

years. Don graduated from Oberlin as president of his class and with high honors; attended Western Reserve Medical School for one year; and then transferred to the Harvard Medical School from which he graduated in 1918, again with high honors and again as president of his class.

Unit was mustered out in 1946. In 1944 and 1945, he was appointed chief medical consultant to the Mediterranean Theatre. During this time he was called upon to help and advise in the treatment of Sir Winston Churchill's pneumonia.

In his army service his strength of character and leadership blossomed anew. It was to him that everyone turned with their troubles; King, the man, as well as King, the physician, had the respect and confidence of all. Letters from the personnel of the Unit, from the lowest to the highest in rank, are filled with anecdotes and descriptions that illustrate how much he was respected and loved.

After the war he returned to his practice and teaching in Boston, but he always held himself available for government service. Twice he was sent as consultant to the Far East at the request of the Surgeon General. In 1951, the Public Health Service sent him to Germany as consultant on the physical examinations required of immigrants to the United States. The author of numerous papers, he served as president of the American Thoracic Society and also of the Massachusetts Thoracic Society.

In 1953, after his retirement from MGH and teaching at the Harvard Medical School, he became consultant in pulmonary disease at the Mary Hitchcock Memorial Hospital in Hanover, New Hampshire. In 1957, illness forced him to retire from active teaching and practice. During the next few years he enjoyed short trips in this country as well as a trip to Hawaii and two to Europe.

He is survived by his wife, Helen Gulick King, a daughter Peggy King Weston, and a son William, a geologist, of Riverton, Wyoming.

Don King was a man who had everything that the world likes in a man. He was scornful of all sham and dishonesty, and devoted to the highest standards of medicine and of living. He will be sorely missed by all who knew him.



After receiving his M.D. degree, for a short period he was an intern in orthopedics at the Children's Hospital in Boston, before joining the American Expeditionary Force of World War I and serving in France as Captain in the Medical Corps throughout 1919.

During 1920 and 1921 he interned at the Massachusetts General Hospital and late in 1921 opened his office in Boston for the practice of internal medicine. Very soon his interest in pulmonary disease manifested itself and he became closely associated with Dr. Frederick T. Lord. Between 1931 and 1942 he served as Chief of the Pulmonary Clinic at the MGH, and as Lecturer at the Medical School. He steadily grew in professional stature and demand.

Immediately after Pearl Harbor he again volunteered and joined the Sixth General Hospital Unit as Lieutenant Colonel and medical chief to serve in Casablanca, Morocco, and later in Italy. He became a full Colonel, serving in this capacity until the

DWIGHT L. SISCOE '19

HONORS

John M. Bruner '49, resident physician in anesthesiology at the Peter Bent Brigham Hospital, has received the 1963 Mead Johnson Award. Dr. Bruner is one of three to receive this award, which is granted to physicians in residency training in anesthesiology whose clinical and research work has been particularly meritorious.



Dr. Gustave J. Dammin

Gustave J. Dammin, professor of pathology and pathologist-in-chief at the Peter Bent Brigham Hospital, has been appointed a member of the Expert Advisory Panel on Enteric Diseases of the World Health Organization for a five-year term. Dr. Dammin attended the first meeting of the Panel in Geneva last month and presented his paper, "Pathology and Pathophysiology of Enteric Diseases."

J. Englebert Dunphy '33, professor and chairman of surgery at the University of Oregon Medical School, is now the new president of the American College of Surgeons. At its Clinical Congress held in San Francisco in honor of its 50th anniversary, Dr. Dunphy spoke on the increasing need for personalized family care; "team work with a competent, sympathetic, and broadly educated family doctor is the only way that the surgeon can meet his responsibilities."

Glen R. Leymaster '42, has been appointed president and dean of the Woman's Medical College of Pennsylvania, effective January, 1964. A specialist in public health and medical education, Dr. Leymaster has been associate secretary for the Council on Medical Education Hospitals of the American Medical Association for the past three years.

Robert M. Stecher '23, was recently honored at a special ceremony dedicating

the new Stecher Laboratories for the Study of Rheumatic Disease at Bell Greve Outpatient Building, Cleveland. The new laboratories will be used for studies in the broad field of diseases of connective tissue. Dr. Stecher has been associated with Cleveland Metropolitan General Hospital and Western Reserve University School of Medicine for the past forty years. He is a noted researcher and author in the field of rheumatic disease, and was a founding trustee of the Arthritis and Rheumatism Foundation and president of the American Rheumatism Association.



Dr. Joseph Stokes 3d

Joseph Stokes 3d, '48, assistant chief of medicine at Queen's Hospital, Honolulu, has been appointed dean of the newly created medical center of the University of California in San Diego. Although construction of the medical school buildings will begin in 1965 or 1966, Dr. Stokes will assume his new post in 1964. Before joining Queen's Hospital, Dr. Stokes was a heart-disease control officer of the Hawaii State Health Department and director of the Hawaii cardiovascular study, which has been supported by the National Institutes of Health. Dr. Stokes' special interests lie in the preventive medicine and the epidemiology of essential hypertension in coronary artery disease.

Bernard F. Trum, lecturer on veterinary medicine in the department of pathology and director of the New England Regional Primate Research Center, has been named president-elect of the Animal Care Panel at their 14th annual meeting in Los Angeles. Dr. Trum will assume this office in 1965.

Joseph T. Wearn '17, dean *emeritus* of the Western Reserve University School of Medicine, Cleveland, has received the John



Dr. Joseph T. Wearn

M. Russell Award of a medal and a check for \$1,000. Given "to the individual who has made an outstanding contribution to academic medicine, the impact of which should have been felt widely and outside of the recipient's own specialty field and beyond the persons in his . . . immediate entourage." The award was established in 1962 by the Markle Scholars to honor John M. Russell, president of the John and Mary R. Markle Foundation, New York. The initiator of an experimental medical curriculum at Western Reserve University, Dr. Wearn is also renowned for his studies of the kidney and his pioneer work, with Dr. A. N. Richards, on the micropuncture technique.

Dr. Bernard F. Trum



ALUMNI NOTES

1905

Fritz B. Talbot presented a one-man show of his paintings at the gallery of the Cape Cod Art Association in Hyannis this summer.

1911

Ralph L. Reynolds is "still in active practice and continue(s) to enjoy having something to do each day."

1915

G. Philip Grabfield is "continuing to revel in retirement. Busier than ever, but not with medicine."

William E. Hunter has retired from active practice and spent the past year in Europe.

George W. Van Gorder retired from active practice four years ago and is now living at Mt. San Antonio Gardens in Pomona, Calif., where he will "be happy to welcome any or all of his old friends."

1916

Kenneth Churchill reports that "the new 34-bed Alice Peck Day Memorial Hospital in Lebanon, N.H., will be opened about the first of next year."

1920

The Faulkner Hospital has honored Gerald L. Doherty this year by dedicating a new meeting room in his name.

Stuart Mudd, "as professor *emeritus* of microbiology, University of Pennsylvania, I am conducting a research program on the pathogenesis, prevention and treatment of staphylococcal infection. I have also edited Volume II of the World Academy of Art and Science, *The Population Crisis and the Use of World Resources*. The European edition of this will be published in The Hague in 1963; the American edition by the Indiana University Press in April, 1964."

1921

Randolph K. Byers is "being treated very well, working part to full time as consultant in neurology at Children's Hospital, having a very good time at it, by kindness of Children's and Professor Charles Barlow."

Elmer L. Severinghaus and his family have moved from Montclair, N.J., to Brookfield Center, Conn. "I continue commuting to my teaching in the Institute of

Nutrition Sciences, Columbia University School of Public Health."

1922

Hallowell Davis writes, "not much new. Still going strong as director of research at Central Institute for the Deaf."

1923

Derrick T. Vail, Jr., was in South Africa from Aug. 12 to Sept. 16, 1963, on the United States-South Africa Leader Exchange Program — the first physician to have had this appointment.

1924

Panos S. Dukakis is "looking forward to the Fortieth Reunion."

Raymond H. Goodale is retiring December 31, 1963, and is moving from Worcester to Cotuit, Mass.

Merrill C. Jobe has two sons, William E. and Charles J. Jobe, both graduates of the University of Colorado Medical School, now in practice. William is in radiology in Denver and Charles is in orthopedic surgery in Dallas.

James L. Smead has been retired since April, 1963.

Hiram O. Studley asks, "how does the desirous and capable student of average or below average means learn that there are ways to hurdle the financial barrier to a medical education? Is there a story on the dissemination of such information, or do they come by it by chance? If told, the story needs retelling."

1925

Robert J. Schneck, who has been chief of medicine at Harper Hospital for several years, has just been elected chief of staff there and is deeply involved in helping to develop the new \$100 million medical center in Detroit."

Franeis P. Twinem writes, "a year ago last summer I attended the Eighth International Cancer Congress in Moscow and toured the Soviet Union. This past summer my family, including three grandchildren, spent the month of August in Boothbay Harbor, Me."

Peter F. Weiss reports: "maximum breathing capacity — 60%. Nine grandchildren and three more on the way."

1926

Charles R. Baisley queries, "are there any general practitioners left? . . . I need two or three here!" (Reading, Mass.)

Henry E. Gallup is "still working and trying to consistently break 100 at golf!"

Carl E. Johnson, who has been retired for the past two years, writes that "I never had it so good."

I. Leonard Levin is "still in active practice (allergy) in my Lorain and Cleveland offices, and as chief, allergy section, VA Regional Office, Cleveland. However, I eased up somewhat after my myocardial infarction on July 3, 1961. My son, Morton Q., graduated from the University of Michigan in June, 1963, and is now in his first year of Michigan Law School.

John W. McKoan, Jr., has been elected president of the Worcester City Hospital House Officers' Alumni Association for 1964.

Ernest G. Scott writes that "in a weak moment I accepted for this year the job of president of the Virginia Society of Internal Medicine. My younger girl, Adele, was married in March, 1963, in San Francisco in Grace Cathedral."

1927

Allen S. Johnson says that "as president of the Massachusetts Medical Society, I am learning a lot which isn't in the HMS curriculum!"

Jacob Lerman was married to Frances A. Winer on October 6, 1963. He now has his second son at Western Reserve Medical, second year, and his stepson at Yale Medical School, first year.

1928

Paul F. Dwan says, "I work in pediatric cardiology as usual. Visited our grandchildren in Santa Monica in August. Enjoying a very fine duck season and (then) off to our Florida home in November."

Ralph E. Fielding writes, "it was a great pleasure to visit with Carl and Viola DePrizio in Seattle this past August. They were en route to Alaska. Hope others will let me know when they will be here."

1929

Carlos G. de Gutierrez-Mahoney and an associate have been awarded the British Institute of Radiology's Barclay Prize for 1962, in honor of their work, "Automography," which was published in the *British Journal of Radiology*, July 1962. Dr. de Gutierrez-Mahoney is director of the department of neurology and

